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ISSUE 193
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OM-D

E-M5 Mark II

*According CIPA Standard: +5EV Steps as of February 2015

**Among D-SLR and compact system cameras.

WELCOME

FROM THE EDITOR



ANDY HEATHER / BAUER

A S A PHOTOGRAPHER, I worry less and less about getting a shot absolutely right in-camera. The old photographic values about capturing subjects and scenes as perfectly as possible haven't disappeared, but they've certainly been subdued a little. The reason behind this is down to one, magnificent innovation: RAW. It's the ultimate safety net for photographers. Because you can use its power to adjust exposure, restore detail, enhance colour, inject contrast and even recompose a shot, it means you can respond faster and shoot pictures more freely than ever before.

The ability of RAW to rescue shots that aren't quite there is something we celebrate in this issue. In a series of inspirational tutorials starting on p63, we reveal how you can bring back pictures from the brink, and transform them into beautiful images.

If you haven't yet discovered how RAW can make you a better photographer, you'll find it an amazing journey, and if you're already a convert, you can wise up with some in-depth tips and techniques. Either way, you'll find the ideas in this issue will improve your images and give you pictures to be proud of!

Another highlight of this issue is an unbelievable offer. To accompany a year's subscription to the mag, we have a Manfrotto backpack and tripod, plus a Lastolite Strobe flash bracket. Together they're worth a whopping £129.99! The details are on p24, but get your order in quick!

Jon

Jon Adams Editor
jon.adams@bauermedia.co.uk

Three ways we'll help you get better pictures this month



1 Inspirational shooting ideas

Using your camera creatively is a big part of the *Digital Photo* experience, and this month's *Fresh Ideas* reveals the easy way to shoot the perfect ground-level shot on p38.



2 Top Photoshop techniques

Symmetrical shots with converging lines have the power to draw your viewer into the scene. Find out how to process and polish a RAW file to make your shots truly satisfying on p70.



3 The best gear buying advice

If you don't want to sacrifice creativity but need a lighter, more compact camera, our group test of miniature CSCs will arm you with the best option. It starts on p116.

13 ISSUES & £129.99 OF GREAT KIT!

A YEAR OF DP, PLUS A BACKPACK, TRIPOD & FLASH BRACKET - SEE P24



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Photo



**SAVE
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ON MEMORY
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HARD DRIVES
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13 issues of the UK's favourite photo mag delivered direct to your door, plus a Manfrotto backpack, a Pixi tripod, and a Lastolite flash bracket worth a whopping £129.99!

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9 VIDEO TUTORIALS ON YOUR FREE CD



90 MINUTES OF EXPERT ADVICE

Pop the *PhotoSkills* CD in your PC or Mac and get set for a brilliantly absorbing learning experience. There are nine in-depth video lessons on the disc, all brought to you by the same photographers who make the magazine. Each video is specially created to help you master core imaging skills. Because you get to watch our experts talk you through the whole process, it's a bit like receiving one-to-one tuition, only you're in charge of when it happens! Plus you can watch the videos as many times as you like, and really master the techniques on show.

On this month's action-packed disc, we help you master the important subject of RAW in Photoshop, Elements and Lightroom. Sit back and watch the projects come to life on screen, and you'll be enhancing your own pics in no time. It's a great method of learning and will ensure you get the best out of your photography.



1 DETAIL IN THE DARK
Rescue a murky, underexposed shot and bring back hidden detail in the darkest areas of the scene.



2 PERFECT YOUR PICS
Correct optical defects in your lenses and fine-tune your framing to achieve the perfect composition.



3 BALANCE EXPOSURE
Discover how to darken a sky and brighten a foreground to balance the exposure in a scene.



4 REDUCE NOISE
How to control and suppress the digital Noise that reduces the image quality of high ISO pictures.



5 CONTROL COLOURS
Use RAW to enhance individual colours in a shot, directing the viewer's attention to the right place.



6 REINVENT LIGHTING
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7 VINTAGE-LOOK PETS
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8 LIMIT COLOURS
Take a pet portrait in an entirely new direction in Camera Raw by restricting the colour palette in the scene.



9 FLOWER POWER!
Capture the essence of spring! Shoot your best ever floral images with a selection of expert tips.

Also on your amazing interactive disc this month...



START IMAGES
Use these RAW files to practise the projects described in the video lessons.

READER GALLERY
Inspirational images from *DP* readers.



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I'VE GOT YOU



This image was the first in a series shot by photographer **Brandon Cawood** titled *Not All Wear Capes*. The series featured real-life public

safety and law enforcement professionals performing their duties in heroic, movie-like images.

For most of his composite work, Brandon shoots with an ISO of 100 and an aperture of f/8. He does this so each element will blend as seamlessly as possible in Photoshop. Like many digital artists, Brandon likes to eliminate chance and take full control of his lighting. For that reason he chooses to remove the effect of ambient light by shooting at a shutter speed of 1/200sec and using studio flash on his subjects.

Despite his ample experience, Brandon also finds himself learning as he goes.

For example, he had never shot fire before and had to seek advice from fellow photographers. Brandon soon learned that he'd need to use a fast shutter speed to freeze the flames, which would require a much higher ISO than he was used to. He also discovered that capturing the flames on a black background would make compositing them into the final shot as easy as changing their Blending mode to Screen.

After its release, the *Not All Wear Capes* series attracted the attention of the international media and helped Brandon to raise money to provide art classes for under-privileged children in his local community – an appropriately heroic outcome for a remarkable series.

Camera Canon EOS 5D Mark III & 24-70mm f/2.8 lens

Exposure 1/200sec @ f/8, ISO 100 **Software** Photoshop

Visit brandoncawood.com





HAPPY SPRING



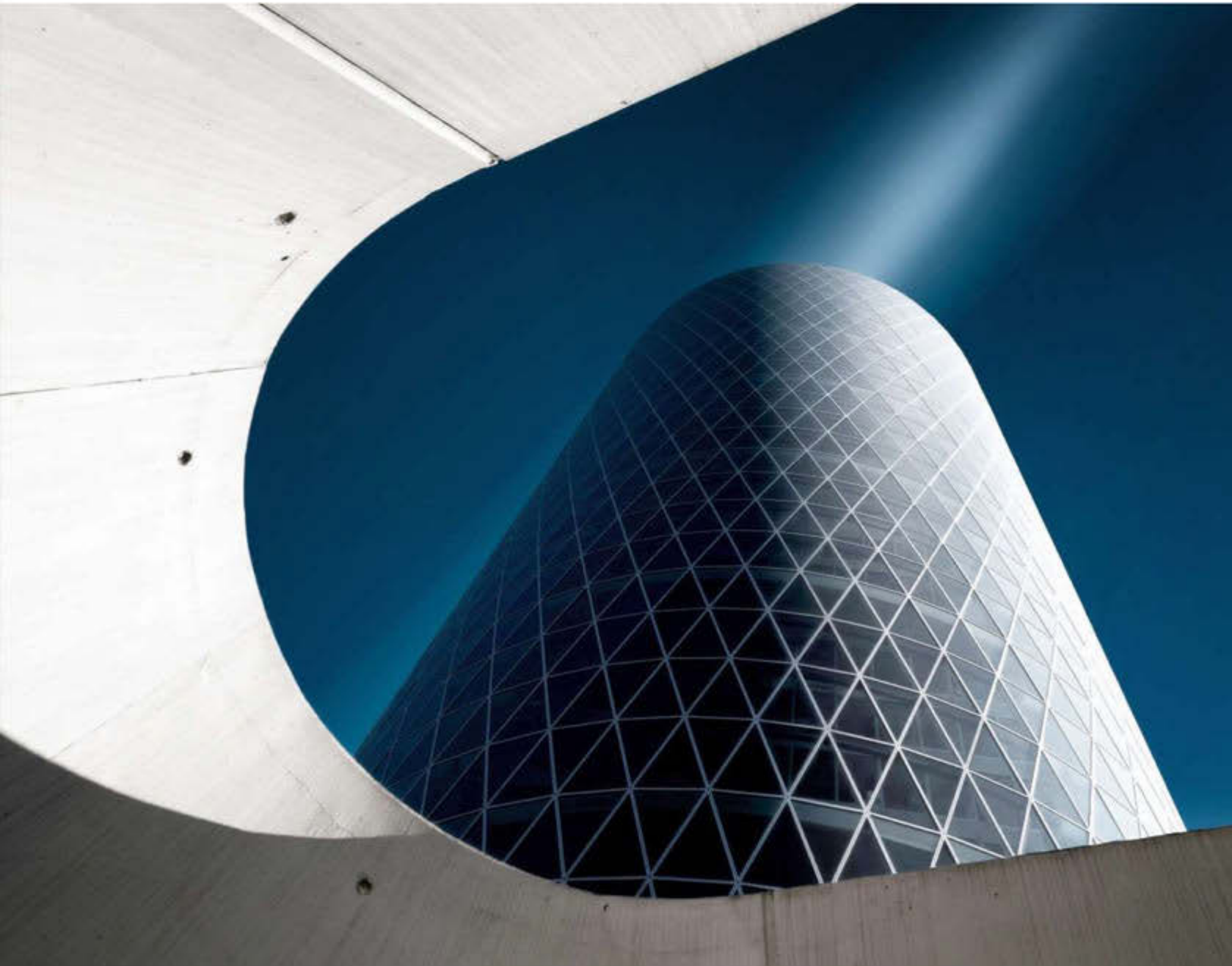
Photographer **Christin Gilbert** took advantage of a short lull in Vancouver's spring rains to take this truly beautiful shot. The cherry blossom blooms just once a year for a very brief window of time, flashing bright pink before drifting gracefully back to the ground. It's intense beauty and bittersweet

brevity is said to represent the fleeting nature of all life. Christin decided to mark the seasonal change by capturing detail shots of Vancouver's 50 different cultivars of flowering cherry blossom trees. These are celebrated every year via community events as part of the city's Cherry Blossom Festival. She used a technique called aperture stacking to achieve the effect you see here. That involved using f/11 to get as much of the branch as possible in sharp focus and then taking another shot at f/1.6, which allowed Christin to capture the creamy blur in the background. The shots were combined in Photoshop to create a truly breathtaking image.

Camera Canon EOS 5D Mark II & Sigma 85mm f/1.4 lens

Exposure 1/1000sec @ f/1.6 & f/11, ISO 100 **Software** Photoshop

Visit christingilbert.com



ARCHWAY TOWER



Like many photographers, **Holger Glaab** first got into the field back in the film days, but it wasn't until the advent of the digital age that his passion was rekindled and his photography moved up to the next level. Although he's a fan of urban exploration, Holger's main area of interest is in architectural photography and he's a master at finding lines

and shapes. In the case of this shot of the Westhafen Tower in Frankfurt, Germany, Holger managed to find a spot from which to juxtapose the building's straight, geometrical shapes with a smoother, curved structure in the foreground. The building's fascinating, rhombic window pattern and cylindrical shape are made all the more interesting in the context of the foreground frame.

The fact that the U-shaped concrete wall in the foreground has almost the same shape as the tower from this viewpoint – albeit rotated anti-clockwise by 90° – is what gives the picture its own distinctive character.

Camera Canon EOS 5D Mark III & 135mm f/2 lens

Exposure 1/60sec @ f/8, ISO 100

Software Photoshop

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CARAMBOLA



When the weather isn't conducive to shooting outdoors, Indiana-based architectural photographer **Lee Mandrell** likes to take his camera into his home studio. One such day, he was struck by the urge to try something new, so he decided to attempt some close-up food photography. After a little experimentation, he came up with a simple

yet effective technique: he took a star fruit and sliced it thinly enough that light would shine through it. He then placed it on a sheet of glass over a sheet of white paper and shone a powerful lamp onto the paper to create his white background.

With a little artistic framing and a large enough depth-of-field to keep the entire fruit sharp, Lee came away with an intriguing,

almost abstract, food shot. His final image is proof positive that a little experimentation and a natural talent for composition can be more important than a high-tech studio setup and the most expensive gear.

Camera Konica Minolta Maxxum 7D & 50mm f/2.8 lens

Exposure 1/60sec @ f/11, ISO 100

Software Photoshop **Visit** lemansstudios.com



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UNTITLED COLLECTION



Russian photographer **Margarita Kareva** likes to create staged portraits with a heavily theatrical and fictional flavour.

To give her images a symbolic appeal, she prefers to leave them untitled. This, she believes, doesn't limit the potential readings of the work and allows her viewers to provide their own interpretations. Although she can't pinpoint exactly

where her ideas stem from, she says that the model and the locations provide the initial inspiration.

Her shots often depict beautiful women in natural environments. They often take advantage of limited colour schemes, with only two or three colours dominating the palette.

The strong fantasy thread in her images leads to the subject taking on almost mythical proportions, sometimes appearing to represent

facets of the Earth such as a season, the spirit of the forest or a goddess of the sea. Margarita's work displays a thorough understanding of the nature of digital photography; her artistic and transporting shots require a well-balanced mix of practical shooting skills and keen post-processing virtuosity.

Camera Canon EOS 5D Mark III & 135mm f/2L lens

Exposure 1/150sec @ f/2, ISO 100

Software Photoshop Visit kareva-margo.com

GET THE SHOT

Capture outstanding images right now with inspiring ideas and expert advice

SHOOT FAMOUS LANDMARKS AT TWILIGHT FOR EXTRA DRAMA



THE IDEAL LIGHTING CONDITIONS

for shooting this twilight cityscape lasted just five minutes, but preparations by photographer **Giuseppe Torre** began hours before he pressed the shutter button. "I was on a trip to Paris with only a few hours to

choose the right spot for a shot of the city skyline. At first I was considering the Eiffel Tower, but eventually I decided on the Tour Montparnasse at twilight. Unfortunately, it's a popular tourist destination, so to keep the crowds out of the shot I had to claim my spot way before sunset and wait for the right conditions to come along."

However, the crowd wasn't the only obstacle Giuseppe had to overcome – the wind also presented a challenge. "I would usually have preferred to shoot for longer at a smaller aperture to give myself a large depth-of-field, but in this instance the wind was so strong that I decided to limit my shutter speed to 15secs. That meant I had to use an aperture of f/9 to get enough light. I used ISO 100 to give myself a clean RAW file that could be pushed a long way.

"My advice would be in addition to picking your location early, you also need to be careful with your White Balance when processing the RAW file. With this kind of lighting it's easy to make things look unnatural," Giuseppe explained.

► www.giuseppetorre.co.uk



Set up your gear for a twilight cityscape shot

■ Choose your location early and set up before the lighting is at its peak. You'll need to use a tripod to steady your camera, so if possible, choose a spot that isn't too crowded.

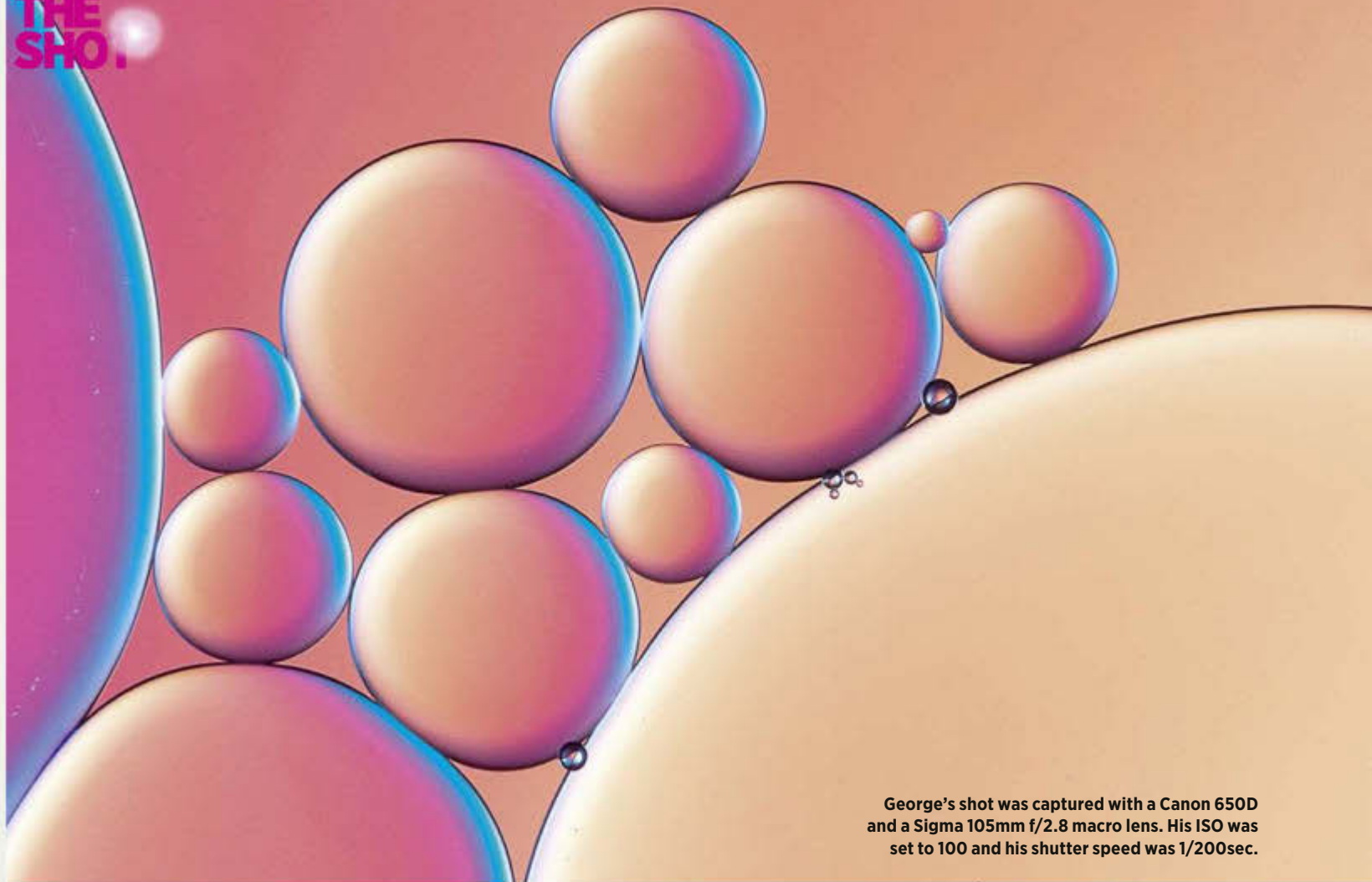


■ Use a focal length of 35mm or wider to capture as much of the city as possible.

■ Set your camera to Manual mode (M on the mode dial) and dial in a shutter speed of 10secs and an aperture of f/8. Set your ISO to 100 to give the best possible quality.

■ Use a remote control or your Self-timer to trigger the shutter to ensure that you don't jog the camera when the shutter opens.

■ Check the shot on screen. If it's too bright, close the aperture to f/11 or f/16 and reshoot. If it's too dark, extend the shutter speed to 20secs.



George's shot was captured with a Canon 650D and a Sigma 105mm f/2.8 macro lens. His ISO was set to 100 and his shutter speed was 1/200sec.

MAKE ART FROM SIMPLE SCIENCE WITH AN OIL AND WATER ABSTRACT SHOT



SHOOTING THESE STUNNING IMAGES OF OIL

in water was a learning process for photographer **George Hauxwell**. "I found that complementary colours worked well with oil-on-water shots," George explained. "I used sheets of coloured paper under a bowl of water to create mine. I also use two off-camera flashguns to light the scene."

To protect the paper, George placed the bowl on a sheet of clear Perspex. "The shots weren't bad, but when I experimented by swapping it out for a sheet of frosted Perspex, the images suddenly took on a wonderful new look with lovely soft tones and pastel shades," he explained.

The circular shapes in the shot are created with oil. "I use Johnson's baby oil because it's crystal clear with no hue, so the colours from the base sheet are reproduced accurately," he said.

"First, add a drop or two of washing up

liquid to the water and then leave it for about 30mins until the detergent bubbles have died down. Then add the oil into the centre of the bowl and again leave it for about 10 minutes, to allow the surface to settle. The detergent stops the oil from clumping together and forming one huge oil slick on the surface."

Once the surface has settled down you can now start looking for nice compositions within the oily surface. "If you can't find any, use your finger to give it a gentle swirl. This will give you a completely new canvas to work with."

When asked what advice he'd give others trying to get a similar shot, George said, "You'll probably get blown-out highlights from the flashes appearing around the edges of the oil circles. To eliminate these, place a sheet of black card under the bowl. Cut a hole under the bowl so the coloured paper's visible beneath the oily water. That will solve the hot-spot problem."

► www.flickr.com/photos/worcester_man

Capture oil-on-water macros

■ You'll need a macro lens and some flashguns or a desk lamp to recreate this image. If you use flash, wireless triggers will allow you to position your flashes off camera, pointing at the paper.

■ In Manual mode (M on the mode dial) set your aperture to f/14 to give yourself enough depth-of-field to keep the oil bubbles sharp.

■ A fast shutter speed of 1/200sec will allow you to shoot handheld using your camera's autofocus, making composition quicker and easier.

■ Set your flashgun sync speed to 1/200sec and reduce your flashes to 1/8 power to avoid blown-out highlights and overexposure.

■ Position your coloured paper under a sheet of diffused plastic. On that, place a sheet of black paper with a hole in it for your bowl. Put a clear bowl of water over the hole and add some washing up liquid. When it's settled, add a few drops of baby oil. Look for attractive arrangements and start shooting.

GIVE CONTEXT TO A LIFESTYLE PORTRAIT WITH DIFFUSED CITY STREETS



JAPAN-BASED PORTRAIT PHOTOGRAPHER

Anastasiya Ostrovskaya, likes her shots to have a story behind them. “My model and I decided to do a

photoshoot on the streets of Tokyo. We wanted our shots to capture the feeling of being a girl lost in the crowd in a foreign city,” she explained.

“I decided to shoot the entire series with a very large aperture of f/1.8. This creates a shallow depth-of-field and I find the beautiful bokeh in the background makes the model look extra glamorous. I also like the way the city lights become diffuse, glowing orbs around the subject. When everything around your model is blurred, not only does it draw the viewer’s attention to her but, in this case at least, it also

emphasises the sense of isolation and ‘outsider’ status in the image. In this case, the blonde, Caucasian model is juxtaposed against what the viewer can make out to be an Asian city behind her.”

If you want to recreate her urban lifestyle portrait, Anastasiya advises: “You can’t control much of what’s happening in the frame when you’re constantly moving through a megalopolis like Tokyo. The model’s movements, the way the wind blows her dress, the arrangement of the crowds behind her – all of these things are constantly changing. As a result, your best bet is to use a fast shutter speed and take as many shots as possible. You’ll only really find out later what you’ve got. For that reason, learning to keep the most interesting shots and rejecting the rest is a really important skill.”

► www.photostrana.jp/

Shoot urban lifestyle portraits

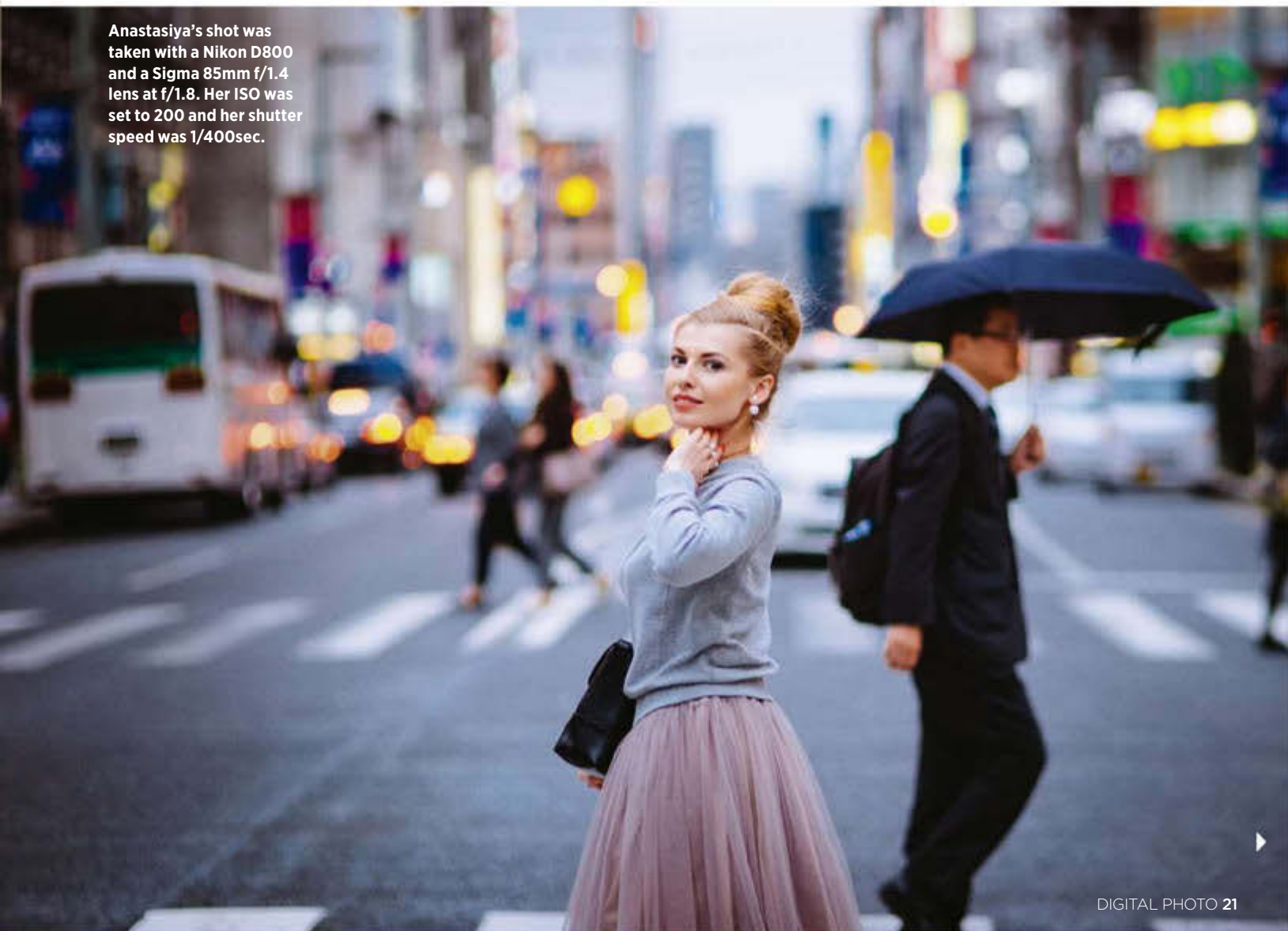
■ To prevent camera shake and subject blur, you’ll need to set your camera to Shutter priority mode (S or Tv on the mode dial) and dial in a fast shutter speed of 1/400sec. Set your camera’s drive mode to burst.



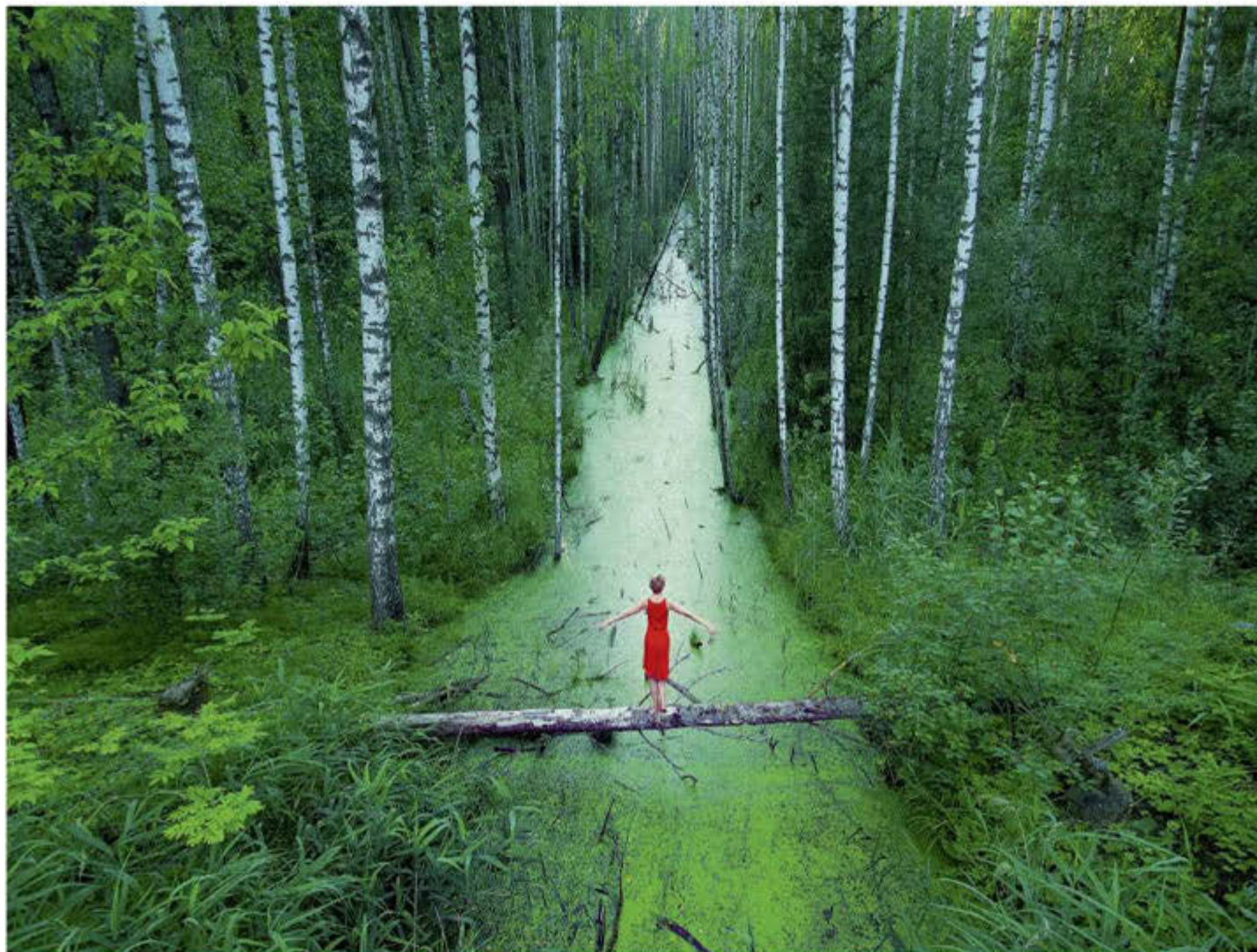
■ Your camera will automatically select a wide aperture to let in as much light as possible. If necessary, adjust your ISO until your camera selects the widest available aperture.

■ Find an urban area with a long boulevard and some street lights. Find a crossing point, and when it’s safe, have your model walk alongside you a few feet away and shoot a burst.

Anastasiya’s shot was taken with a Nikon D800 and a Sigma 85mm f/1.4 lens at f/1.8. Her ISO was set to 200 and her shutter speed was 1/400sec.



Ivan's shot was captured with a Canon EOS 6D and 17-40mm f/4 lens set to f/11. His ISO was set to 100 and his shutter speed was 1/100sec.



USE CONTRASTING COLOURS TO MAKE SUBJECTS LEAP OUT OF A SCENE



SEASONED PHOTOGRAPHERS
OCCASIONALLY LIKE to experiment with traditional disciplines such as portrait or landscape photography. Belarusian photographer **Ivan Letohin** did

just that when he introduced a model into a natural environment, and the result was a shot that is as intriguing as it is beautiful.

"I consider myself a portrait photographer," he told us, "but when I see a really beautiful environment I'm inspired to introduce a little landscape photography into my images. I rarely shoot people with wide-angle lenses, but in this instance I wanted to capture as much of the natural scene as possible."

We asked Ivan to give us some tips for capturing this kind of image. "For pretty much any type of photography I'd say the best tip is just to shoot as much as possible. Experience will teach you when to underexpose, when to overexpose, when to go wider and when to get closer. Always learn by doing.

"When it comes to this particular shot, my best advice would be to take your time finding a beautiful location and the right model. Also, don't worry too much if things aren't perfect on the day: I expanded the environment and changed the colour of the model's dress in Photoshop. The process doesn't have to end when you press the shutter button," he told us.

► www.letohin.com

Shoot models outdoors

- Choose your location with care. Identify the dominant colour of the scene and have your model wear a contrasting colour to introduce some tension and interest.
- Set your camera to Aperture priority mode (A or Av on the mode dial) and use an aperture of f/11. With a wide lens, this will create a large depth-of-field, keeping the scene sharp from front to back.
- Set the ISO to 100 to minimise Noise and give the best image quality.
- Including your model's face personalises the shot. Try shooting them looking away from the camera and into the scene to give your image a more evocative feel.



Capturing Colour: how to light a hair shoot by Christian Hough

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10 TOP TIPS FOR FUNKY FLORALS

Winter is gone and spring has sprung. With nature's rebirth, now's the perfect time to embrace the magic of shooting flowers

WORD & TECHNIQUES BY BEN DAVIS & MATTY GRAHAM

NOTHING ENRICHES THE senses like a spring morning. The hum of still-sleepy bees is interrupted by the chirp of chaffinches and a laundry-fresh scent hangs in the air. The stark, monochrome tones of winter give way to splashes of vibrancy, and it's waiting for you to stride outside and capture.

Mother Nature truly spoils photographers. It's difficult to imagine a subject that can rival flowers for their range and intensity of colours, textures and forms. And what's even better is that they're universally accessible. Your own garden is a great place to start, but public parks and meadows offer the same opportunities, all for free.

You don't even need any specialist equipment, either. Fantastic photographs of flora can be achieved with a basic D-SLR or CSC and a kit lens. Some techniques will benefit from a tripod and a macro lens, but don't be put off if you haven't got these, as we'll show you how to get amazing results without breaking the bank.

Over the coming pages we've put together our 10 all-time favourite shooting tips to help inspire your photography and deliver your best-ever floral images. Each and every one will prove worthwhile, so take your camera out of hibernation and put them into practice. In no time you'll create a colourful portfolio of seasonal beauty.



1 MAKE YOUR FLOWERS LEAP OUT OF THE FRAME

The soothing sight of flowers often comes against a chaotic and cluttered background, as stalks and stems criss-cross each other and plants battle for space. This distraction results in untidy images, so to make sure your petalled subjects get the attention they deserve, use a shallow depth-of-field.

To get this limited zone of sharp focus, you need to use Aperture priority (A or Av on the mode dial). This setting gives you control over the opening in the lens, which governs both the amount of light entering your camera, as well as how blurry the

background is. To get a satisfyingly fuzzy out-of-focus area, you need to set the lowest f/number available. This will vary depending on the lens you're using, but most kit lenses offer a maximum aperture setting of f/3.5.

To enhance the appearance of blur even more, zoom your lens to its longest focal length. The narrower angle-of-view enhances the blur, making the background even fuzzier. This blurry backdrop will separate your floral subjects from any distractions, giving fantastic shots.



Using a large aperture setting to blur out background distractions will make flowers stand out strongly in the frame.

2 SHOOT FINE-ART FLORALS BY PAINTING WITH LIGHT

Natural light is the most obvious choice for flowers, but there are creative shots that can also be captured indoors in the dark. Painting with light is a technique that gives you complete control and can help you add a fine-art feel to your images. You'll need a dark room and a small torch, so you can freely paint the flower with light by changing the angle of the torch while the shutter is open.

Painting with light is a great technique to try in the evening, but can also be done during the day provided you can fully darken a room in your house. The best results come when a dark background is employed. You could use card, or a dark jacket, but for this shot, we used the black side of a collapsible reflector.

If you can't find a suitable torch, most smartphones have an LED light built in that is surprisingly effective for light painting.

As a long shutter speed is necessary to give you time to move the torch around, it's essential to use a tripod to avoid camera shake. A cable release is handy to fire the camera, but the Self-timer mode can be used instead.



MATTY GRAHAM/BAUER

Shoot a fine-art floral in the dark by painting the light in selectively with a torch.



1 Secure the camera on a tripod

This technique uses shutter speeds of several seconds, so handholding the camera is out of the question. Instead, raise a tripod to the height you need for your composition and then secure your camera to the head.



2 Adjust your camera settings

You need to control the camera yourself, so turn the mode dial to Manual (M). Make sure the ISO is set to its lowest setting of 100. Dial in a shutter speed of 4secs and set the aperture to f/11. This is a good starting point, but you may need to adjust the aperture later.



3 Select manual focus mode

As the camera will hunt around for a focus point in the dark, it's important to focus with the lights on. Frame up your flower, half-press the shutter button to achieve focus and then switch to Manual Focus (MF) by flicking the switch on the side of the lens.



4 Paint with light

Turn off the lights or draw the curtains. Trigger the shutter via the self-timer and when it fires, move the torch around at different angles to bathe the flower with light. Keep the light moving all the time, then check the shot on screen. If it's too bright, use f/16 and if it's too dark, use f/8.

3 CHANGE YOUR ANGLE

The most typical angle on a flower is from above, because we seldom view them from anything other than head-height. Extend this viewpoint to your photography, and you won't produce anything people haven't seen before.

To shake up your approach to composition, pick a camera angle that people don't normally see. By dropping to the flower's level and shooting from the ground up, you'll get really fresh shots that will be far more compelling. Use a wide-angle lens and you'll capture a worm's eye view that exaggerates the perspective and introduces your viewer to a whole new world.

Framing up and focusing with a camera close to the ground can be tricky, as you can't usually get your eye low enough to look through the viewfinder. The solution is to either flip-out and rotate the vari-angle LCD if your camera has this feature, or alternatively, use the camera's



Wi-Fi function to compose the scene in comfort via a smart device such as a phone or tablet.

If you have an older camera without these features, then switch on your Live View mode and suspend it upside-down from a tripod. Most good tripods allow you to insert the centre column the wrong way round, and it gives a very stable platform for incredibly low-angle shots. You'll find more advice on doing this in *Fresh Ideas* on page 38.



Coloured card is a cheap and easy way to get studio style shots outdoors.

4 GET THE STUDIO LOOK OUT IN THE FIELD

Setting up an indoor still-life studio can give striking results, but you can achieve a similar look outdoors using natural light. The vibrant pigments of floral blooms have a huge impact when contrasted against a complementary colour, and because you won't need to uproot any flowers, you can get great shots anywhere. Pick up some coloured A4 sheets of card from your local art shop or stationers and you can get pictures ready to grace greetings cards for next to nothing!

It's best to secure your camera to a tripod, as this will leave your hands free to hold the card in place behind your subject. Frame up, choose your settings and focus correctly, then set a 5secs Self-timer. After pressing the shutter button, you'll have ample time to get the card in place, and if you use Live View you can ensure your fingers aren't creeping into the shot. To change background, simply swap the card for another colour, and you'll have a range of different looks in minutes.



A pack of different coloured card sheets gives a selection of 'studio' backgrounds you can take outdoors.



Ground-level shots give a unique perspective on florals that can be much more engaging for the viewer.



Using a tripod is the most effective way to stabilise your camera for sharp images.



Turn off image stabilisation when using a tripod as it can detect its own vibrations and cause blur.

5 KEEP IT STEADY FOR PIN-SHARP SHOTS



Attaching a flower's stem to a cane will help prevent it from moving.

Unless you use a really fast shutter speed, any movement will be recorded as blur. And the more you magnify a subject, the more exaggerated the blur becomes, so small items like flowers are particularly susceptible. There are two types of movement to combat in floral photos – camera motion and subject motion.

Keeping your camera steady is easy with a tripod. Although it can feel like it's slowing down your creative flow, a tripod actually speeds things up in terms of getting high quality shots. After all, a selection of ideas ruined by camera shake isn't any use, whereas half as many thoughtfully composed, pin-sharp shots sees your portfolio filling out. By getting used to the time it takes to set up a

tripod, you'll avoid the annoying fuzzy details and ghosted double edges that camera shake causes. The extra time will also force you to think hard about your framing, and this always results in more considered, better balanced shots.

But banishing camera movement is just half the battle. Even a gentle breeze will cause delicate subjects to bob and weave, and as well as creating blur, it will make focusing and framing a nightmare. To reduce subject movement, insert a slim bamboo cane alongside the stem and secure it with a twist tie. Place the tie as close to the flower head as your shot allows, and taking your shot will be much easier.

The misty spray will replicate the sparkle of morning dew

6 CREATE DEWDROPS WITH A WATER SPRAYER

One of the best ways to add zest to your flower images is to shoot them at dawn when they are decorated with a sparkling coat of early morning dew. But there is a way to get similar results without having to set the alarm clock for an early rise.

The solution is a water sprayer. If you don't already have one, your local supermarket or garden centre will have examples starting from around £2. The misty spray from the bottle will coat the petals in tiny droplets replicating the dew.

When using the water spray, turn the nozzle to its smallest setting to produce a fine, misty

spray. Multiple squirts of this will produce better results than a heavier setting, as any larger droplets will either bounce straight off your flower or will drench the petals and make them sag out of shape.

It's easy to overdo the effect when adding your own dew, so use restraint when spraying, and build up the effect gently. It's much easier to add another misty coat than remove it, but if you do find you have to lose some droplets, use the corner of a sheet of kitchen roll. Just touching the offending drop will see it absorbed into the paper and removed from the petal.



Although it costs very little, a water sprayer that can produce a fine mist is one of the most useful accessories for floral shots, as it adds extra detail and a sense of freshness in seconds.

The dew drop acts like a lens, producing an image inside itself



7 USE BEADS OF WATER FOR REFRACTED BEAUTY

An alternative way to use a coating of heavy dew is as a natural lens. The shape of a water drop perched on a blade of grass or suspended from the edge of a leaf provides photographers with the opportunity to take macro pictures of flowers held captive inside. It's a result of refraction – where the water's surface acts like a lens – and produces a wide-angle image inside the bead itself.

You'll need a macro lens, as the drops of water will be too small to be effectively captured by a standard kit lens. You'll also need a calm day (or will need to set up indoors), as any breeze will make this highly-magnified shot tricky to capture. If you shoot it outside, pack a bin liner you can use to kneel on, as this requires some careful setting up and you'll want to be comfortable.

With a macro lens and the focusing precision required, it's hard to take this shot without a tripod, so set up close to your subject. If needed, you can paint the water drops in place using a small artist's brush. A reflector is handy to bounce light back onto your subject, but a sheet of tin foil will do the same job.



1 Set up your camera

You'll need a macro lens, or an alternative way of magnifying the subject for a big close-up shot, such as a reversing ring, a close-up filter or an extension tube. Switch your main mode to Aperture priority (A or Av) and dial in a value of f/14, to provide a large zone of sharp focus in the image. Set your ISO to 100 to keep image quality to a maximum, and attach your camera to a tripod. Frame up on some dewdrops sitting on, or suspended from a leaf blade.



2 Frame up on your subject.

Place your floral subject 5cm behind the dew drops; it'll need to be a flower you've already picked so you can control its position. Turn on Live View, and frame up so you can see the flower refracted inside the dew drops. Switch your focusing to Manual and zoom into the image using the magnification controls on your camera so the droplet fills the screen. Adjust the focus ring until the flower in the dewdrop appears sharp.

8 CONTROL THE SUN FOR EVEN LIGHTING

A sunny spring day might be great for your spirits, but it's not so welcome when it comes to flower photography. The conditions favoured by professional horticulture snappers are bright yet overcast, as the light is more soft and even. Direct sun causes strong contrast, creating problems with burnt-out highlights and a loss of detail in shadow areas. Neither of these are desirable, so instead of cursing those overcast days, relish them and turn them to your advantage.

To cope with the fine, sunny weather, buy a collapsible '5-in-1' reflector. As well as using the different surfaces to bounce light into the dark side of a subject, you can also use it to create your own shade. Unzip the outer layer, and you'll find a translucent inner skin. Hold this above your subject, and it will soften the light to give flattering results.



Use a diffuser to avoid harsh shadows.

BENDAVIS / BAUER

A macro lens or other close-up accessory is necessary to capture refraction images.

ISTOCK



3 Bounce back some light and shoot

Set a 5secs Self-timer so you can keep your hands off the camera during the exposure, and then when you're ready, press the shutter button. Use your reflector or piece of crumpled tin foil to bounce some light back into your subject. It'll help lift any shadows and make the flower appear more vibrant. Once you've captured the image, zoom in to check you've focused accurately – and if so – admire your handiwork!



Direct sunlight creates too much contrast for flower photography, so a diffuser can be used to soften the light.

9 ADD GLOW BY BACK-LIGHTING

While the right lens will give you a close-up view of your flower, the right light will reveal beautiful detail in a different way. By back-lighting your subject, the petals will glow and the intricate skeleton of the flower can be seen.

This technique can be accomplished outdoors, but you'll be at the mercy of the elements and there isn't always time to wait for the sun to be in the correct position. Instead, take control and bring your flower indoors. By using a flashgun, you will be able to capture a unique image that glows with quality. You'll need to fire the flash away from the camera, so a cable or radio trigger is essential to get the back-lit look. If you don't have a flashgun, you can simply substitute this for a bright desk lamp, and shine it onto the subject from the rear.

By back-lighting your subject, the petals will glow and detail is revealed

Lighting a floral study from the rear is a fantastic way to get a near-3D appearance.

MATTY GRAHAM/BAUER



1 Dial in your exposure settings

Set the camera to Manual mode (M) and dial in the maximum flash sync speed. This differs between cameras, and if you're not sure what setting is used on your model, use 1/160sec. Keep the ISO to a low setting of 100) and start with an aperture of f/11.



2 Set up your flashgun

Connect your radio triggers to the camera hotshoe and the flashgun. The flash needs to fire from behind the flower to create the glow, but don't place it directly behind or it will create flare – or even worse – be in shot. Instead, position it at an angle so it is pointing at the flower but out of the frame.



3 Shoot and refine settings

Take a test shot and review the image on the camera's screen. If the shot is too bright and overexposed, close down the aperture to f/16. If the flash isn't bright enough to reveal detail, select a larger aperture of around f/8, and shoot again.

Finding smaller pockets of detail gives strong compositions focused on texture and form.

MATTY GRAHAM

10 CAPTURE ABSTRACT CLOSE-UPS

Flowers may look beautiful from a distance, but it's not until you take a closer look at their intricate structure that the true wonder of nature presents itself. Going in close with your lens can lead to some stunning images that take on a more arty, abstract feel than wider compositions. From the detailed texture of the stamen to the ever decreasing folds of petals at the centre of a rose, separating the form of a small detail from the whole can produce images with a big impact.

The biggest challenge for floral abstracts is magnification, as picking out details within a flower head requires a lens to focus closer than normal. The easiest way to achieve this is with a macro lens – a fixed focal length optic that has a built-in ability to focus incredibly close to a subject.

When using a macro lens, depth-of-field becomes incredibly shallow as magnification increases. Close down the aperture to f/14 – this will increase the zone of sharp focus but will also lengthen the exposure time. As a result, a tripod is necessary to avoid shake.

How to shoot close-ups without a macro lens

If you don't have a macro lens, the world of close-ups is still open to you. Many 70-300mm telephoto zooms have a 'macro' facility, and while they're not true macro lenses in the scientific sense, they can still capture great tight shots, and offer enough magnification for many good floral abstracts. If you have a telephoto zoom, check its close focusing ability by zooming in to the long end and seeing how tight a shot you can get.

Extension tubes

Best described as hollow lenses, extension tubes are attached between the camera body and the lens. This moves the optics further away from the sensor and forces the lens to focus closer. Available in different sizes, the longer the length of the extension tube, the greater the magnification. Extension tubes are best bought in sets of three, and prices start from around £40.



Reversing ring

Holding a lens the wrong way round reverses the optics and makes close-up shots possible. A 50mm prime lens reversed gives a true macro shot, and a reversing ring allows you to mount it on the camera. A reversing ring costs around £13 but there are cons to this route as they can be fiddly to use and focus and exposure will have to be set manually.

Close-up filters

Often called dioptres, close-up filters start at around £20 and come in different sizes and magnification strengths. They're effectively a magnifying glass that screws on to the front of your lens, so you need to buy the right filter thread for your optic. The extra element introduced into the light path will reduce image quality a little, but they're really easy to use, and their small size makes them perfect for slipping into your kitbag.



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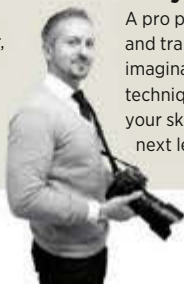
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GET GROUNDED FOR A NEW LOOK

TECHNIQUE & PICS BY DAN MOLD

LOOK THROUGH YOUR SHOTS WITH a critical eye, and you may find they all have something in common. The vast majority are probably shot from head height. While there's nothing wrong with this, it won't often give the best viewpoint or the freshest angle for strong compositions.

Framing up from ground level is the complete opposite of eye-level shooting, as it gives a completely new perspective on scenes. Getting really low with your camera can conjure up pictures that simply don't exist from the

comfortable view from 5 to 6 feet above the deck, so it's a great way of shooting.

The big win is enhanced foreground interest, as ground-level textures can be used large in the frame to draw the viewer into the scene. Another advantage is the viewpoint itself. Nobody looks at the world from this angle, so even everyday scenes with familiar sights become new and exciting. Getting low enough to take the shot is what puts people off. But many tripods can have their centre columns inverted to make the lowest of angles not just possible, but comfortable too.

Nobody sees the world from this angle, so everyday scenes become new and exciting





How to shoot the perfect low-angle picture

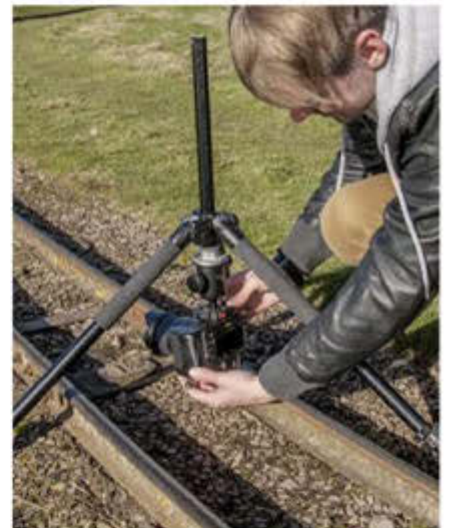
Get low with your tripod

1 If your centre column inverts you can remove it completely and insert it from the underside – some tripods have a release button you need to press to slide it all the way out. Once it's upside down, attach your camera to the head and carefully lower the column until the camera is suspended just above the ground.



Compose your shot

2 Set the tripod's leg angles wide so the legs won't appear in your shot. Depending on your subject, it may prove tricky getting your eye to the viewfinder, so switch on Live View mode to see the shot on screen. Now adjust the tripod head to compose your shot with some ground level foreground interest in the frame.



Dial in your camera settings and shoot

3 Change your active AF point so that it lies over your foreground interest. Half-press the shutter to lock focus on this, then switch to Manual Focus to prevent the AF from moving. Select Aperture priority mode (A or Av), and dial in an Aperture of f/16 for a big depth-of-field. Set ISO to 100 for the best quality, and turn on the 2secs Self-timer so the camera fires itself after a short delay. Press the shutter to take the shot. The image will be captured upside down, but you can flip it by 180° when editing your file to turn it the right way up.



MIRRORED MAGIC

TECHNIQUE & PICS BY JON ADAMS

THE IDEA OF YOUR OWN reflection misbehaving itself is a fear deeply embedded in our collective psyche. The concept of a reflection acting in a different way to the subject that creates it is of course irrational and illogical, but that's exactly what makes the idea so unsettling!

It conjures up the sense that reflections inhabit a different world, and passing through the boundary would undoubtedly land you in a whole heap of trouble. Horror films have celebrated this fear for decades, and it's so well-documented that scientists even have their own word for it – spectrophobia. Capturing a shot that reveals the condition isn't at all

difficult, and can even be taken as a self-portrait. This makes it a fantastic project to try when you have a spare half hour and the urge to get creative.

You'll need a location with a mirror, and picking an everyday spot and activity will make the inconsistent reflection all the more surreal. The reflection shot itself is taken immediately after the 'normal' shot, and you get the full effect when the two are combined in Photoshop.

To get a good result, you'll need to indulge in a little acting to get your reflected alter-ego looking as menacing as possible. It's great fun to do, so take a quick tour to find the best mirror, then follow the steps to bag a spooky selfie!

A reflection acting in a different way is illogical, but that's what makes the shot so unsettling!

Key skills you'll learn right here



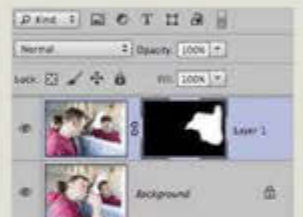
SHOOTING MULTIPLE, IDENTICAL FRAMES

Many creative shooting techniques require a camera set up with the same composition, exposure and focus settings. Knowing how to do this makes subsequent image editing work quick and simple to accomplish.



ADJUSTING ISO

The ISO control adjusts how sensitive your camera's chip is to light. Making it more sensitive means less light is needed to make a good exposure, so a faster shutter speed can be used. This is important to master, as any subject that can move needs to be 'frozen' in place to avoid getting blurred results.



USING LAYER MASKS

Layers in Photoshop allow you to combine different pictures to create a single final image. Layer Masks let you hide or reveal parts of each shot to get a seamless blend between the two. This technique uses simple masking techniques to achieve the illusion shown.

How to shoot a spooky mirror image

Because you need to take two identically framed shots, a tripod is essential. By using one, you can fix the camera in position, and then shoot as many alternative 'normal' and 'reflection' poses as you need. A fairly acute angle is needed to get a good reflection shot, so the camera is likely to be within arms' length of the subject, making self-portraits easy. Because space is likely to be limited, use the widest focal length you have. An added bonus of using a wide angle lens is you'll hold more of the scene in sharp focus, so when you focus on the subject, the reflection will be sufficiently sharp too.

Placing the subject's fingertips on the glass of the mirror for both shots will create a clear bond between the two images, so once you've got the first shot, don't move the hand until you've taken the second one.

LOCATION

Pick somewhere everyday like a bathroom or dressing table. More obscure locations will detract from the story.

CAMERA

You need a model with creative exposure controls, so a D-SLR or CSC will be ideal.

USE A WIDE LENS

Space is often restricted, so to get as broad a view as possible. Use an ultra wide angle lens or zoom a kit lens back to its 18mm setting.

THE SUBJECT

A little acting is required to create the 'normal' and the 'reflected' shot. Use plain clothing as the focus needs to be on the facial expressions.



Set up the scene for your mirror picture

1 Place your camera on a tripod and frame up from an angle that takes in the subject and their reflection. Zoom back to your widest focal length – 18mm on an 18-55mm kit lens is ideal. Place the active AF point over the subject, and half press the shutter button to lock the focus. Now switch to Manual Focus mode using the focusing selector switch on the camera and/or the lens. With the focus set, it won't change between the two shots, and this will make marrying up the two pictures much easier in Photoshop. If you're taking a self-portrait and can reach the camera easily, stand in position in front of the camera, and half-press the shutter to get a focus lock, before flipping the focus from AF to MF.



Dial in the camera settings

2 Select Aperture priority (A or Av on the main mode dial) and set an aperture of f/5. Check your shutter speed in the viewfinder, or on the info display screen. You want 1/60sec or faster to avoid any subject blur, so if you have a reading slower than this, hold down the ISO control and increase the ISO setting until you get it. We needed 400 ISO for our shot, lit by natural light. For a self-portrait, set the Self-timer mode and pick a delay of 10secs. This will give you plenty of time to get into character before the camera fires!



Take the 'normal' shot

3 Place the hand that's furthest from the camera on the mirror and bridge the fingers so the 'connection' between the subject and the reflection is firmly established. Make sure there's no eye contact between the subject and reflection, so look away from the mirror and indulge in an innocent everyday activity like brushing teeth, shaving or combing hair. Once you've worked out your pose, press the shutter button to start the Self-timer's countdown.

When the exposure has finished, take a few more with alternative poses and expressions. Don't move the hand from the mirror, though – this needs to remain exactly where it is to marry up seamlessly with the 'reflection' shot.



Tech talk

LOCKING FOCUS

AF systems will attempt to focus on whatever is under the AF target point in the 'finder'. To take two or more shots focused at the same distance, Manual Focus is used. This is done by disengaging the AF motor via a switch so it can't move.

SELF-TIMER

By enabling this useful feature, the camera fires itself after a preset delay time. This gives you time to get in shot for a self-portrait, or gives a method of shooting without touching the camera at the moment of exposure – a procedure that can cause camera shake.

APERTURE PRIORITY

With this exposure mode, shown by A or Av on the main mode dial, you set the aperture required and the camera will work out the shutter speed for a good exposure. It is the default mode for most photographers, as it will always give a good exposure, regardless of the light levels present in the scene.



Take the reflection shot

4 Keeping your body and furthest hand in the same place, get rid of the prop you're using and press the shutter button again.

For this image, look directly at yourself in the mirror so you make full eye contact with the reflection.

Dip your head slightly and assume a more menacing expression. An evil grin should do the trick nicely! Hold the expression until the camera fires, and then repeat this as many times as necessary until you feel you've put in an Oscar-winning performance and have a good 'take' of your alter-ego!

Combine your shots in Photoshop or Elements

If you shoot your mirror shots in your camera's RAW format, you have much more control, and can enhance the colour, contrast and exposure with a high degree of precision. The RAW format is the best option for creative shots, as it allows you to make the shot as perfect as possible. Open the normal shot first, and in the Basic tab, adjust the sliders to get the image looking rich in detail and well balanced.

Once you've got the look you want, hit **Open Image** and then open the second shot with the menacing reflection. Instead of running through all the sliders again, click on the fly-out menu at the top right of the Basic tab and select **Previous Conversion** from the list. This will apply all the adjustments you've just made to the second image. Click **Open Image** again, and

when the picture appears in the regular interface, hit **Ctrl+A** to select it, followed by **Ctrl+C** to copy it. You can now close it down with **Ctrl+W**.

Back on the first picture, hit **Ctrl+V** and the second shot will be pasted over the top. In the Layers palette (**Window→Layers**), click the **Add Layer Mask** icon and a white rectangle will appear alongside the top Layer. Hit **D** then **X** to set the foreground colour to black, and then select the **Brush tool**. Use a large, soft-edged brush and paint black into the area where the 'normal' character should be. They'll be revealed from the Layer beneath. Work away with the brush, so you get a seamless join between the two pics. If you make a mistake and reveal an area you shouldn't, hit **X** to swap to a white brush and paint over the error.

Putting both pictures into the same document and using a Layer Mask will allow you to combine the two images into one with a seamless blend.



KNOW YOUR MODE DIAL

Get to grips with your camera's various shooting modes so you know you're always using the right one

WORDS BY BEN DAVIS



TAKING CONTROL OF your camera's Mode dial is often the first victory on the road to becoming an accomplished photographer. Understanding which Mode you should select for different scenarios will ensure your camera settings work in favour of your photographs. How much control you take over the exposure settings is entirely up to you. You can be solely at the helm if you opt for Manual mode, you can take charge of a single exposure variable in Aperture or Shutter priority, or you

can let the camera do more of the work in any of the pre-programmed Scene modes.

Most photographers – once they've decided to venture away from full Auto – find themselves exploring the Scene modes available on their Mode dial. These allow the photographer to tell the camera what kind of subject they are shooting, and the camera selects the best settings for that type of subject with the available light in the scene. But when you use a Scene mode, it's not just the exposure variables which are adjusted to

suit your chosen subject; factors like White Balance and in-camera processing are also affected to produce the desired look.

The type and number of Scene modes available varies across the different manufacturers and model ranges, but typically most cameras include: Landscape, Portrait, Sports, Child, Night Portrait and Macro at the very least. We'll take a look at these, as well as the other options on a Mode dial, so you can be sure you're always using the best mode for your photography.

Discover the different options on a typical Mode dial

WACHIRAKI / DREAMSTIME

SHUTTER PRIORITY

You select the shutter speed and the ISO, and the camera works out the aperture required for a balanced exposure.

APERTURE PRIORITY

This lets you control the opening in the lens. You decide the aperture setting (f/number), and choose the ISO, and the camera selects the shutter speed.

PROGRAMME

This is a semi-auto mode. The camera decides on the shutter speed and aperture setting, but you control the ISO and whether or not the flash is used.

MANUAL

You take full charge of all the camera settings, and take complete creative control.

AUTO

Essentially 'point-and-shoot' mode, the camera takes full control of all the settings, and will activate the pop-up flash once lighting conditions become dim.

NIGHT PORTRAIT

This uses a slow shutter speed along with the flash to create a well-lit shot in dimmer conditions.

NO FLASH

Just like Auto, the camera decides what settings to use, but will never activate the pop-up flash. Instead, the ISO is boosted to increase the camera's sensitivity to light.

MACRO

This mode is designed to photograph small subjects which are close to the lens.

PORTRAIT

This uses a wider aperture to create a blurry background, separating the subject from the backdrop.

SPORT

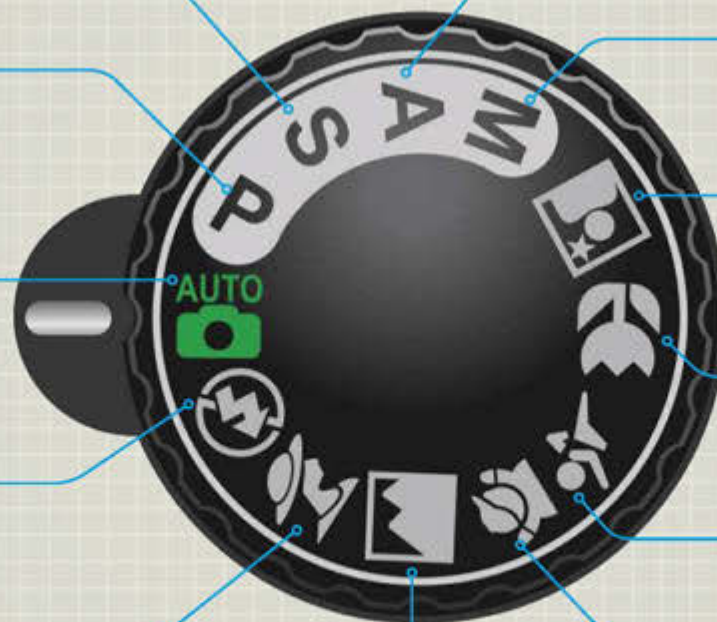
This will freeze the action by using a fast shutter speed.

CHILD

A faster shutter speed and bigger depth of field are used to capture those who find it difficult to stay still!

LANDSCAPE

In Landscape mode, the camera uses a smaller aperture to give good front-to-back sharpness.



SHOULD I USE SCENE MODES?

Scene modes are a great way of getting started if you're not too sure of the finer workings of your camera. Even if you are familiar with your f-stops, using Scene modes can help you get good results when the action's happening fast and you don't have time to be more involved with the settings. Remember though, that Scene modes won't change the light at your location – they'll just apply what's considered to be the most appropriate settings for the subject you're shooting.

If you're set to record JPEGs, your images will undergo some degree of in-camera processing, the amount of which varies between manufacturers. For example, Landscape mode may well boost colour saturation, and Portrait mode is likely to process the pic in a way which keeps skin detail soft. Some in-camera processing may shorten editing time, but shooting JPEGs will ultimately limit the range of options when post-processing. The only way to take full control over is to shoot RAW and process the files in software like Adobe Camera Raw or Lightroom.

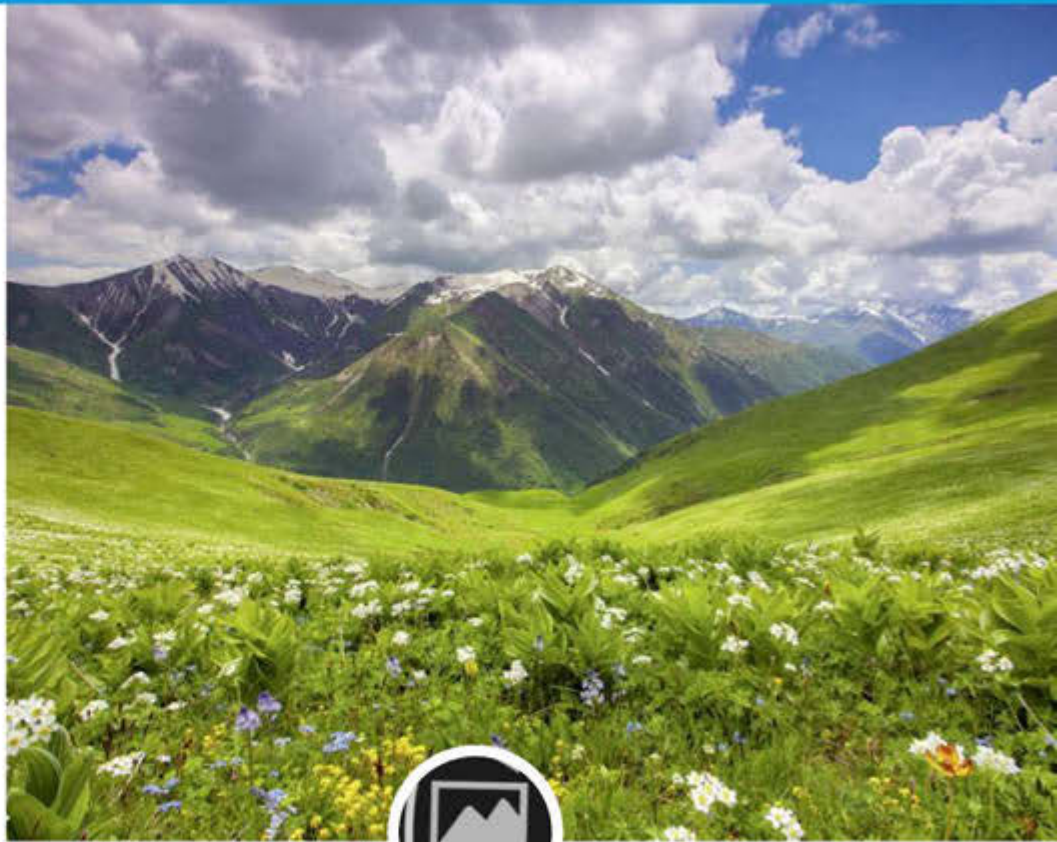


ISTOCK

Portrait

This gives priority to the aperture setting, but instead opts for the widest possible aperture (low f/number) to create a shallow depth-of-field. This means that when the subject is in focus, the background melts away into a fuzzy blur.

The camera also decides the shutter speed and ISO required for a good exposure, but as soon as the light becomes scarce the pop-up flash is activated to help illuminate your subject.



ISTOCK

Landscape

When you choose the Landscape Scene mode, priority is given to the aperture setting, as this governs the depth-of-field. A narrow aperture – indicated by a higher f/number, like f/11 – is selected as this means more detail will be in focus, which is better for scenics. A narrower opening in the lens also means less light is entering the camera, so in order to gain a balanced exposure, either the

shutter needs to be open for longer or the sensitivity of the chip needs to be increased. The Landscape Scene mode is programmed to use a slower shutter speed, as increasing ISO to boost sensitivity produces more digital Noise, which adversely affects image quality. As this mode uses longer exposure times, it's always best to use a tripod to keep images sharp and free from camera shake.



Sport

When you're in the Sport Scene mode, the camera adjusts its settings to allow for a fast shutter speed, which is needed in order to freeze any motion. It does this by using the widest possible aperture (lowest f/number) to let in the maximum amount

of light, and boosting the ISO to make the chip more sensitive. Focusing is set to Continuous to keep moving subjects sharp, and the Drive mode is set to its fastest setting to capture a burst of images, helping you to get the shot.

ISTOCK

Macro

If you select the Macro option from the Mode dial, the camera adjusts the settings to assist with taking pictures of smaller subjects close to the lens. It sets the aperture so that there's a good depth-of-field to keep detail sharp, and keeps the ISO relatively low to keep Noise at bay and preserve image quality. If the shutter speed becomes too slow, then the flash comes into action to add light to the scene. The active AF point is often placed centrally and set to its Single-AF setting, to aid focusing on static subjects.



Other Scene modes

Many cameras – particularly more recent models – contain many more Scene modes, designed for a range of circumstances. Different manufacturers vary with the presets they offer, but the four mentioned below are common, and offer something different to the regular Scene modes.



SUNSET

This uses a smaller f/number to capture a good depth-of-field and also keeps the ISO lower to preserve image quality. The White Balance settings and saturation of the JPEG will be geared towards enhancing the vibrant reds and yellows of a sunset.



DUSK/DAWN

This mode assumes there is less light available than at sunset, and so the aperture is opened a bit more to let more light through to deliver a steady shot. The White Balance is cooler than the Sunset preset too, to emphasise what's known as the 'Blue Hour'.

BEACH/SNOW

Both beach and snow scenes tend to be bright, and as such, whites are rendered as muddy grey due to the way a camera meters the light. This Scene mode overexposes the shot to keep brighter tones true to life.

CANDLELIGHT

This uses a low f/number to let more light reach the sensor, but won't allow the shutter to drop below 1/60sec to keep detail sharp. To preserve the balance of ambient light, the flash isn't used. Instead the camera increases ISO to get a good exposure.



Night portrait

In Night Portrait mode, the camera settings are geared towards exposing for the dark background, while illuminating the subject closer to the lens. The aperture is set to its widest setting (lowest f/number), the ISO is boosted and the shutter speed is slower so more light can enter the camera. The pop-up flash is also called upon to both light your subject, and freeze any movement close to the lens.



Child

With the Child mode selected, a faster shutter speed is chosen to freeze any sudden quick movements, as young children aren't always the most patient subjects. The aperture is a bit narrower too, to give a bigger depth-of-field. This helps keep the kids within the band of focus, if they're prone to moving. To compensate for these light-restricting settings, the ISO is increased.





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TAKING MORE CONTROL OF YOUR CAMERA

While Scene modes will likely get you better shots than using full Auto, they're no substitute for taking the reins yourself and bending the camera's settings to your creative will. As you may have already discovered, Scene modes aren't a fail-safe for great photography: the only way to guarantee getting the results you want is to take the plunge into exposure modes that offer more control.

The first place to start is with P or Program mode. This lets you set things like ISO and White Balance, handing you partial control, but the camera will still decide the shutter speed and aperture to get a balanced exposure. While you may have a correctly exposed shot, the shutter speed may be too slow for your subject, so it's not an ideal mode to shoot with if you're after more control. However, on most cameras, Program mode will let you override its suggested settings. All you need to do is rotate the sub-command dial to take control of one of the exposure settings, and the camera will do the rest to ensure a well-exposed shot.



Aperture

Aperture priority (A or Av on the mode dial), is the semi-automatic mode that most people find easiest to master. It gives you control over the opening in the lens, indicated by the f/number, and controls both the amount of light entering the camera, as well as the size of the area which is held in sharp focus (the depth-of-field). You can also set the ISO, but the camera will decide the shutter speed. Most D-SLRs with a kit lens offer around 17 options in Aperture priority, ranging from



BEN DAVIS / BAUER

f/3.5 to f/22. Just remember the lower the f/number, the bigger the aperture, so there's more light to work with but a shallower depth-of-field. The opposite is true for higher f/numbers. Once you've got this bit nailed down, it's easy to shoot in Aperture priority and control how much of your scene is held in sharp focus. If you're shooting a portrait, you know to select a low f/number, and if you're framing up on a landscape, dial in a higher f/number.



Shutter priority

In this mode (S or Tv) you're in charge of the shutter speed, which is displayed as a fraction of a second, or sometimes whole seconds. You also have control over ISO, but the camera will set the aperture. Shutter speed controls how long the sensor is exposed, and how movement is recorded.

An entry-level D-SLR will commonly offer over 50 different shutter speeds to choose from, making it slightly more perplexing than using Aperture priority if you're still learning the ropes. The basics are simple to



BEN DAVIS / BAUER

grasp though. Slower shutter speeds – like 1/10sec – let in more light, and will also record movement as a blur. Faster shutter speeds – like 1/500sec – let in less light, and will freeze any movement with sharp detail, so are great for capturing sport and action. Sometimes you'll want a slower shutter speed to get creative and show a rush of traffic or the surge of a tide. If so, you'll need a tripod to keep the camera stable, as if it moves during the exposure you'll blur all the detail in your shot.

Manual

In Manual mode (M on the mode dial), you're in full control of all the settings. You're guided by your camera's light meter so you know if your exposure will be balanced or not before you press the shutter button. Lots of photographers also take 'test shots' and then check the results on screen, to make sure the tones are just right. While shooting in Manual mode offers full control, it's not essential for good pictures. Most professionals prefer to shoot in Aperture or Shutter priority, as you still take creative control over the most important parameter, but are free to concentrate your attention on getting the shot.





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PICKING THE RIGHT TIME

Timing was all-important in the creation of this image. Wim waited until 1am for the streets to clear of pedestrians and for the city's lights to stand out against the darkness. He also selected a rainy evening so the wet stones would become reflective, effectively multiplying the number of light sources in the image to create a dazzling effect.

SHARPNESS AND CLARITY

Wim's image has a restricted colour palette but is extremely rich in detail. From the cobblestone streets to the shops in the distance, the image is packed with pin-sharp stonework throughout. The use of HDR post-processing has deepened and accentuated those fine lines, bringing Ghent's character to the fore.

SMALL APERTURE

Wim has created attractive starburst patterns on the light sources within the frame. These occur naturally with smaller aperture values, and Wim's choice of f/11 gives a superb effect. The added bonus is that it holds the entire scene in sharp focus, from front to back.

NIGHT IN THE CITY



Discover what makes **Wim Denijs'** long-exposure cityscape of Ghent in Belgium such a striking image

WORDS BY ANDY HEATHER

HDR POST-PROCESSING

This image was created with an unusual combination of techniques: High Dynamic Range photography and a long shutter speed. Because shooting multiple exposures can create unwanted 'ghosts' as objects pass through the frame, Wim chose to create his HDR image by blending multiple RAW conversions, all created from a single shot.

SLOW SHUTTER SPEED

This image would have far less impact were it not for this bold and colourful slash of red that slices through it a third of the way up the frame. This dash of light and colour was created with a slow shutter speed of 15secs, which was long enough to capture the lights of a bus as it passed over the bridge and in front of the camera.

Want to get a shot like this? Here's the info you need

Wim used a 17-40mm f/4 lens on his Canon EOS 5D MkII to take this shot, but anyone can shoot great long-exposure HDR images at night with some basic kit.

USE A TRIPOD AND YOUR CAMERA'S SELF-TIMER FOR LONG EXPOSURES

When shooting long-exposure shots, you'll need to keep your camera rock-steady. Use a tripod

and set your camera's Self-timer to 2secs. That way, you won't jog the camera and introduce camera shake when you press the shutter button.

CHOOSE THE RIGHT TIME OF DAY AND SEASON FOR BEST RESULTS

Take a leaf out of Wim's book and wait for a time of year when there's no construction work visible. Also, shoot during or after rain. Wrap

your camera in a large freezer bag to avoid splashes and attach your lens hood to protect the front element. Remember to take a lens cloth or microfibre towel in case rain drops get on your lens.

SET UP YOUR CAMERA FOR TRAFFIC TRAILS

To get car brake lights streaking through your shot, you'll need to use the right camera settings.

Set your camera to Manual mode (M on the mode dial) and set your aperture to f/11. This'll keep the scene sharp all the way through. Next, set your lens to a wide focal length of 18mm and your shutter speed to 15secs with your ISO at 100. Make sure your camera is set to shoot RAW files; you'll need all the data the RAW format offers to expand the dynamic range in software.

FLASH MODIFIERS

ALL YOU NEED TO KNOW

There's a variety of different ways you can alter the light emitted from your flash gun or studio light. Discover the effects of each with our easy-to-follow guide

WORDS BY BEN DAVIS

Softbox

WHAT IS IT?

A tent-like modifier in which the light is diffused through a large white panel. They're square, rectangular or sometimes octagonal in shape, and their structure is held in place by flexible rods threaded within the material. The sides of the softbox are black to prevent light spill, and the inside of the panels are white or silver to bounce the flash light through an inner and front diffusion panel.

WHAT DOES IT DO?

Softboxes create a soft light that is generally considered flattering. They are designed so the light ricochets off the inner surfaces and exits via the front diffusion panel, giving a wide spread of light.

WHAT ARE THE BENEFITS?

The light passes through two pieces of material so the light is more diffused than most other modifiers. The large front diffusion panel wraps light around a subject with soft shadows. As the light only comes from one panel, it offers great directional control for precision lighting.

WHAT ARE THE DOWNSIDES?

They create square catchlights in a subject's eyes; this isn't considered appealing so fashion and portrait photographers tend to opt for the octagonal versions. Assembly can be fiddly if you're in a rush, and they can be large.

Softboxes are one of the most popular flash modifiers.

Umbrella

WHAT IS IT?

Available in either shoot-through or reflective versions, umbrellas (or 'brollies') are a very common attachment for increasing the spread of the light from a flash. The shoot-through variety tends to be white on both sides, whereas the reflective types can have a silver inner with a black outer skin, to control the light differently.

WHAT DOES IT DO?

An umbrella diffuses the light so it covers a much wider area than a bare flash bulb. A white shoot-through umbrella is referred to as a 'light bomb' by some photographers, as it throws soft light everywhere. The flash head is reversed for a reflective umbrella so the light bounces off its silver lining. The black outer skin prevents and light leaking from the back of the attachment.

WHAT ARE THE BENEFITS?

As the light from the flash is reflected off or diffused through a much larger surface area, the light is much softer, giving more subtle-edged shadows. The quality of light is considered to be highly flattering for portraits and still-life. Umbrellas do a similar job to softboxes, but tend to cost less, and are much quicker to assemble.



Umbrellas are very quick to put up and attach to a light stand.

WHAT ARE THE DOWNSIDES?

Umbrellas – particularly shoot-through types – offer much less control over where the light falls, so if you want to be precise with the fall-off of light, you're better off using a softbox. As the light is only diffused through a single skin, it's not as even as a softbox, with the light brighter towards the centre of the spread. Also, if you're using your umbrella attachment outside, they catch the wind easily and can cause your light stand to topple over, potentially damaging your kit.

Honeycomb grid

WHAT IS IT?

A honeycomb grid is a thin square or circular device that attaches directly in front of a flash. The inner structure resembles something similar to a honeycomb pattern – hence the name – and they are usually made out of a light metal or plastic. Each honeycomb structure has a similar diameter to that of a drinking straw.

WHAT DOES IT DO?

It's designed to focus the light into a tight beam, with little diffusion. The honeycomb is black to prevent light from bouncing in other directions, so the light

remains tightly focused for precise work. The size of the honeycomb grid dictates the tightness of the beam, with narrower cells producing a more concentrated effect, and larger cells giving a wider spread.

WHAT ARE THE BENEFITS?

Attaching a honeycomb grid to your light will produce a tight beam of light with little spill, allowing you to precisely control where the light falls. This is great for rim lighting a subject, or for throwing a pool of light onto a studio background to create separation from the subject.



A honeycomb grid concentrates the light.

WHAT ARE THE DOWNSIDES?

A honeycomb grid can be an unnecessary expense if you already have a snoot, as the two perform very similarly. As the light from the grid isn't diffused, it produces harsh unflattering shadows and is rarely used as a main light.



Beauty dishes give a hard and edgy look popular for models or athletes.

Beauty dish

WHAT IS IT?

Put simply, it's a large metal bowl that attaches to a light source. There's a small circular opening cut in the back of the dish through which the light enters. In front of this is a round metal plate, which blocks the light shining forward, but instead reflects it onto the walls of the dish to diffuse the light onto the subject.

WHAT DOES IT DO?

A beauty dish creates a focused light source without a central hotspot, making the spread more even, with gentle fall-off at the edges. It produces a softer light than direct flash, but it's not as diffused as a softbox or umbrella. Because of the shape of the attachment, it does a good job of wrapping light around a subject.

WHAT ARE THE BENEFITS?

Beauty dishes are often used in fashion or sports portraiture and create quite a hard, edgy look. When positioned above the subject, they're great for accentuating muscle or cheekbones. If you move the dish closer to your subject, the light becomes much softer, making beauty dishes a highly versatile flash modifier.

WHAT ARE THE DOWNSIDES?

As the light is reasonably harsh and hard-edged, it can be quite unforgiving in the way it accentuates textures in skin. This gives a very sharp-edged look for portraits, but make-up is often necessary to avoid pores and wrinkles being overly pronounced. They're only for specific portrait styles, so aren't very versatile.

Snoot

WHAT IS IT?

A snoot is a tube or conical object which attaches over a flash to direct the beam of light. It's usually black in colour and is made from metal, plastic or sometimes fabric.

WHAT DOES IT DO?

The cylindrical nature of the snoot means it focuses the light into a tight, narrow beam, a bit like a honeycomb grid. The black lining creates little spill, assisting with the spotlight effect. Sometimes a honeycomb grid is fitted to the end of the snoot to tighten the spread of the beam even further.

WHAT ARE THE BENEFITS?

A snoot is ideal for illuminating just a small part of your scene, for very precise lighting. As there is minimal spill, it's also ideal to rim light subjects, creating a halo effect on their edges. If you haven't got much to spend, a snoot is very easy to fashion yourself – just use a large paper cup or even a modified Pringles tube!

WHAT ARE THE DOWNSIDES?

One of the primary disadvantages of using a snoot is that the fall-off area of the



A snoot will transform the light into a narrow beam.

light is very abrupt. If you want a slightly smoother feathering effect on the edge of your pool of light, a honeycomb grid is more suitable.

Barn doors

WHAT ARE THEY?

Often seen on theatre lights, barn doors are a set of four hinged flaps arranged around a central opening. The doors – sometimes referred to as leaves – can be placed in any position along the hinge. They're usually made out of metal and are painted black.

WHAT DO THEY DO?

Barn doors allow the light to be sculpted and give lots of flexibility when it comes to shaping the beam. If you want a narrow beam, two of the doors folded close together create a thin slit of light. For more of a spotlight effect, the four leaves can be positioned to create a square shape.

WHAT ARE THE BENEFITS?

There's a wide variety of shapes that can be made for lots of different lighting effects, so they are a very versatile light modification tool. The shapes created tend to have a straight edge, so barn doors are great for preventing light spill onto backgrounds, and for creating snoot-style effects.

WHAT ARE THE DOWNSIDES?

The shape of the doors make the pool of light straight and rectangular, which is a disadvantage if it's not the desired effect. The light isn't diffused, so produces less flattering results for direct lighting.



Barn doors give creative freedom over the shape of the light.

Coloured gels

WHAT ARE THEY?

These are squares of transparent but coloured plastic or acetate, and are placed in front of the light source. They're available in a huge variety of different colours, and are usually held in place with a clamp. They're made of a heat-resistant material, as modelling lamps inside flash heads can get hot.

Coloured gels alter the hue of the light for creative effects.

WHAT DO THEY DO?

The gels alter the colour of the light coming from the flash, so a red-coloured gel will give you red lighting in your images, and a blue gel will... you get the idea!

WHAT ARE THE BENEFITS?

Gels offer a great way to conjure up different atmospheres and create lots of different looks and styles to your images, for a low cost. Some coloured gels are designed to replicate the colour temperature of a particular light source. If you were using flash in a tungsten-lit room, you'd have two different colour temperatures to contend with. Using a gel to adjust your flash means the scene can be lit with a consistent colour temperature.

WHAT ARE THE DOWNSIDES?

Once you've taken the shot with coloured gels, it's much more difficult to return the lighting to neutral when you come to edit, rather than adding coloured effects to your processing in software.

American Beauty



Portrait photographer Dani Diamond is a social media sensation. We find out why his unique, natural portraits have been viewed over two-and-a-half million times...

WORDS BY MATTY GRAHAM

THE STEAM GENTLY RISES UP from the subway as a yellow taxi flies past on its way to pick up a new fare. Swathes of skyscrapers top this concrete jungle canopy, but somehow natural light still finds its way on to the New York sidewalks. This is Dani Diamond's playground. The urban studio that provides a unique backdrop for the 26-year-old's incredible images that are causing a storm on the internet and bringing his photographic talents into the limelight. As the famous song goes 'if I can make it there, I can make it anywhere' and Dani is certainly living the dream.

"You don't need to be talented to be successful – you need to be ambitious," says Dani, "that's a piece of advice I wish I'd been given a long time ago." The talented native of Ohio graduated from college with a degree in business administration, but soon developed his hobby of photography at a rapid pace. "What interested me most about photography was the fact photographers were able to blur out the background in their images. Once I learned more about the process, the technical details of photography fascinated me and my passion for the subject grew from there."

While Dani is a highly competent landscape

photographer, it's his portraits, bathed in natural light, that have attracted a Facebook fanbase of 40,000 admirers. They follow Dani to see his latest work and learn from the tutorials he posts on the internet site. "I enjoy shooting landscapes as much as portraiture, but social media influences a lot of what I shoot," he explains. "When I saw people enjoying my portraits, I decided to shoot more of that genre. With time, as I learned more about portraits, I gravitated to shooting portraits exclusively."

Dani's approach to his portraiture focuses as much on the connection between



Dani shot this image in New York. He chose the narrow alley as the walls created lead-in lines.

Who is Dani Diamond?

Dani is a professional photographer shooting fashion, commercial and landscape imagery. Working out of New York, Dani also offers workshops and one-to-one tuition. Dani has a large social media presence, writes weekly features for online photo website, fstoppers.com and is about to release his first tuition DVD. More of his work can be seen at www.danidiamond.com

photographer and subject, as it does on more technical considerations such as composition and lighting. "To me, the expression you capture is what makes a truly great portrait," says Dani. "Some viewers may connect to the colour of an image, some to the location and maybe even the light that's captured, but every person in this world connects to the expression. Even more than that, you can have a technically sound image with perfect lighting and exposure, but if the subject's expression is blank, the image will ultimately fall flat on its viewer." With this personable approach to his portraiture Dani explains that ►



For this shot Dani directed his model to place her hands on the stool. This pulled in her shoulders and tightened up the body pose.

**It's the model's
personality that helps
you walk away with
great portraits**

BEFORE



The majority of Dani's edits to this image focused on the background. He corrected the green tints to match his model's hair colour.

AFTER



picking the right model for each shoot goes beyond the physical look of the subject. It's the connection he feels with the model that sways his decision to hire them. "It's the model's personality that helps you walk away with great portraits."

Dani is one of those photographers who can successfully claim to have a signature style. He describes his compositions as 'tight' – between three-quarter body shots and headshots. As the use of large apertures is one element that first hooked Dani onto photography, it's not surprising his portraits feature a shallow depth-of-field. "This helps the viewers go straight to my subject's eyes and expression. My portraits are more about the subject as opposed to the location or props," he explains.

To blur the backgrounds, Dani takes a liberal approach to camera settings, shooting in Aperture priority mode. He prefers the semi-automatic mode over Manual as it allows him to trust the camera to balance the exposure, giving him more time to concentrate fully on having fun with his models and directing them to produce the best poses and expressions. "Viewers don't care about your camera settings. They care about good portraits. I find that many photographers get caught up in the technical side and forget the ultimate goal of producing

Quickfire questions

We read that you're into music - what's the best tunes to listen to while editing pictures?

The answer to this is purely personal taste. I happen to love 'chillstep' – it's a mellow version of dubstep. Six months ago I created a group on Facebook called 'Epic Remixes for Retouching' and we now have over 4000 members sharing music daily.

What's your favourite lens at the moment and does your taste for optics change from time to time?

My favourite lens is the Nikon 85mm 1.4G. It gives my subjects just the right amount of space yet not too much, so I can still interact with them. It's a sharp lens and the backgrounds melt away at wide apertures.

Whose work inspires you?

I'm inspired by those who have done one-on-one online mentoring with me for retouching. To watch others around me grow as I do is the biggest inspiration.

Just as important as kit is a portrait photographer's skill in directing a model. What tips have you learned over the years to make directing models easier?

I've found that directing a model by asking them to copy what you are doing makes it a

lot easier. So instead of directing them from a distance I put down my camera and demonstrate the pose I'd like them to do. Additionally I have an album with a collection of poses from previous shoots on my phone. I whip that out during a shoot and show the model the exact pose I have in mind.

What's the funniest or craziest thing to happen to you on a photoshoot?

The craziest thing that happened to me is actually not funny. After a month of securing a location for a fashion shoot we got kicked out of the location after everyone had arrived. There were seven models and my team. Luckily I was able to drive around a little and winged it at a new location while eight cars were following me. The pictures at the new location turned out to be better anyway so it worked to my benefit.

If we asked you to divide up how you spend your time, what percentage would you attribute to each task?

During the warmer months I shoot every day but photography is only 20% of being a photographer. Answering emails, planning photoshoots, marketing and post processing take up the majority of my time. And over the past year, I've been spending every Thursday writing an article per week for Fstopper.com.

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Shot at a yacht club in New Jersey for a clothing brand, Dani searched for a location that would make a good landscape as well as a portrait.



Why Dani underexposes his images...

BEFORE



Dani has a consistent shooting style, where he underexposes his subjects. This isn't a slip of the command wheel – Dani intentionally underexposes subjects to avoid blowing the highlights, particularly in his model's skin or in any sky that appears in the frame.

Dani says that underexposing an image makes Dodging and Burning three times easier

AFTER



– which is an important processing stage should you wish to have correct light in the final image. Finding the right amount of underexposure will be different for each image, so if you're shooting in Aperture priority, try using the camera's Exposure Compensation feature. Dial in a negative value and then review the results on screen.

solid results. A technically perfect photo is useless if the subject or content is boring."

Dani's approach to lighting is far more considered. Finding the right natural light at any given location is his main challenge and he aims to time his shoots two hours before sunset. This gives the advantage of the softest sunlight. "Flat lighting makes your subjects' skin look flat, and that's something you want to avoid. Directional light forms and shapes the skin which makes your subjects stand out and pop." But Dani's choice about his light source is very pragmatic. "The only reason I use natural light as opposed to flash is the fact that I don't need to carry around extra equipment. Even if I had my assistant take care of setting up the lights, you are creating a mood by bringing lights on a shoot. I don't like making my subjects feel like they are on a photoshoot. I want them to feel like we are just hanging out. This helps them feel comfortable, and that helps me capture great natural poses and expressions."

Travelling light also helps Dani and his model move quickly through the busy New York streets to get from location to location. "New York has unlimited resources and opportunities. Every day I'm meeting new people, talent and locations," says Dani.

Shooting with a Nikon D800 paired with a Nikkor 85mm f/1.4G prime lens, Dani also



After cropping this image to cut out the model's elbow, the model's arm tapered in and looked odd. Dani used Photoshop to widen the bottom of the arm for a more natural shape.

carries a Hoodman Loupe – an accessory he says he wouldn't leave home without. "When shooting outdoors the reflection on your camera's LCD screen always has that annoying glare. By using the loupe between your eye and the screen you can see everything accurately without hunching over and cupping your screen to shade the sun."

Whatever kit he uses, Dani is nothing short of a social media phenomenon. Along with the impressive Facebook following, Dani writes technique advice on photography website F-Stoppers and the images in his 500px portfolio have been viewed more than two and half million times. That proves to be a great incentive: "The more exposure my work gets the harder I find myself trying to improve. I owe a lot to those who follow me and support me on social media. They're the ones who push me to do what I do." What's more impressive is that his portraiture has attracted this attention without resorting to seedy poses and wardrobe choices that strip his subjects of dignity. While Dani searches for his models through agencies or simply photographing friends of friends, he dresses them modestly, wearing trousers and sweaters or shirts. "In my opinion, a girl doesn't need to be half-naked in images to be attractive."

While Dani's use of natural light is impressive, his post-processing skills are equally adept. Dani believes that when it comes to editing images, the mindset is more vital than the how-to technique, and he takes a natural approach to retouching his models that's in-keeping with the organic capture style. "It's important to remember the purpose is to enhance the image and keep it natural. My goal is not to change the image by

When it comes to editing shots, the mindset is more vital than the how-to technique

throwing on a bunch of presets. The key is keeping it natural, to produce the best possible version of the picture without making the retouching obvious," he says. "The reason I feel this way is because something like a strong vintage preset will only speak to a fraction of your crowd. It may be in style today but tomorrow it will not be. By keeping it natural you are targeting a much larger audience."

Looking to the future, Dani explains that photography has much more of an effect in his life than simply providing a means of income. As a naturally reserved character, Dani's new career has resulted in him becoming more comfortable, outgoing and friendly when meeting people. In a city of nearly nine million souls, that can only be a good thing. And it's onwards and upwards all the way for Dani. "When I first started out, I made sure not to set any goals. Instead, I would just look back and make sure I'd grown," says Dani. "This helped keep all doors and opportunities open. Had you asked me what my goal was then, fashion photography would not be the answer, but now that I shoot fashion I couldn't be happier. This past year I made up my mind to concentrate on only shooting fashion and portraits. I plan to do this for the rest of my life and only get better and pick up more clients along the way."

This positive attitude, respect for his craft and creative approach to his post-processing workflow has won Dani an army of fans – just visit Dan's social media pages to read the feedback he receives on a daily basis. And with more people than ever viewing his impressive portraiture, that fanbase is surely set to grow.

The gear Dani uses to edit his fantastic portraits

No, this isn't the Batcave! Feast your eyes upon Dani's editing suite where he perfects the RAW files captured on his Nikon D800. "Some people collect cars, but I spend my time and money on my workstation. It has to be the ultimate because I'm there for many hours every day," explains Dani. The large screen visible at the top of the image is actually created by a projector. Dani also uses four Dell 23-inch monitors to divide up the use of different applications. Two screens are dedicated to Photoshop, while one is permanently used with Adobe Bridge. The last screen is for emails and internet browsing. Dani uses a PC, that he customised to include a SSD drive for faster operation and increased reliability. The Wacom tablet is placed on a second shelf so that it's level with Dani's wrist to avoid repetitive strain injuries.

Music is essential for Dani and he has installed four KRK Rocket speakers (two either side of the screens), plus there's a 12-inch subwoofer under the desk. "I can't edit without music," says Dani, who also has a high-tech mixer on the desk to control the sound output from each speaker for optimum quality.

**PROJECTOR
SCREEN**

**MUSIC
SPEAKERS**

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GRAPHICS
TABLET**

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DELL
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Now, thanks to Camlink's lightweight bag and tripod range, you can take as much pleasure in travelling as in arriving! Before you check in, check out the new Camlink CL-CB40 sling bag and TP Carbon Fibre 2500 tripod

"It's well designed for a typical DSLR travel outfit and the price is just right!"
F2 mag Group Bag Test Jan 15

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Check out our full range of affordable high specification bags and tripods before you travel

The Camlink CL-CB40 is a 33x20x12.5cm sling bag, constructed from material that's completely waterproof, with moisture resistant zippers, and lots of pockets for storage. It offers secure body-facing opening. With padded innards, the bag also includes a rain cover, a side pocket, seven dividable foam protective interior pockets, one easily accessible front pocket and high visibility interior with foam padded dividers.

'With top flight specifications and build quality both the Camlink Carbon Fibre 2500 Tripod at £99.95 and the Camlink CB40 Sling Bag at £55 really are a Gift !' – BPI News, Oct 14

"You could pay two to five times this price"
F2 mag Camlink tripod test Jan 15

The Camlink TP Carbon Fibre 2500

is a new four-section carbon fibre tripod complete with a removable ball and socket head. The head (right) features a quick-release system plus an in-built spirit level to ensure horizons are straight. The centre column is reversible and splittable, enabling a four-stage high/low feature to get the camera positioned low to the ground for artistic landscapes or macro photography.

Specifications

Maximum height 140cm, closed 39cm
Weight only 1.256kg Max. Load Weight 6kg
Supplied with stylish padded carrying case – really compact and lightweight for travelling and to carry out on location.

TP
Carbon
Fibre 2500
tripod only
£99.95



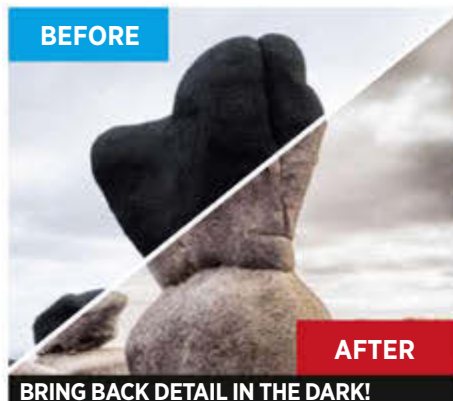
CAMLINK bags and tripods are available from your local digital photo and video specialist – visit www.camlink.photo/en_us/where-to-buy or call distributors Nedis UK on 0116 253 0325



Photoshop GENIUS

The imaging skills today's photographers need!

RESCUE
YOUR SHOTS
with
RAW



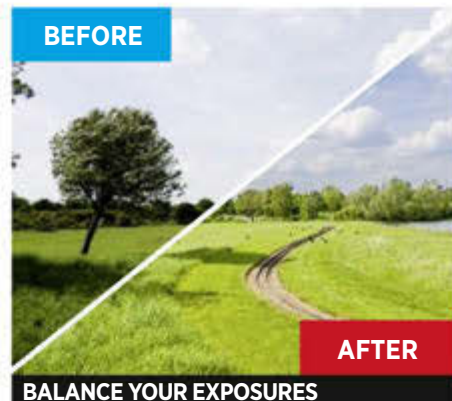
BRING BACK DETAIL IN THE DARK!

Rescue underexposed shots [p66](#)



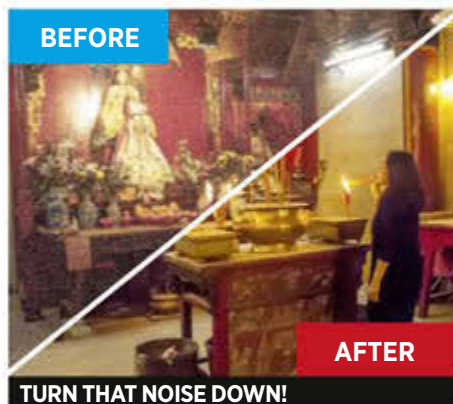
PERFECT YOUR PICTURES

Fix lens defects and recompose [p70](#)



BALANCE YOUR EXPOSURES

Get sky and land in harmony [p76](#)



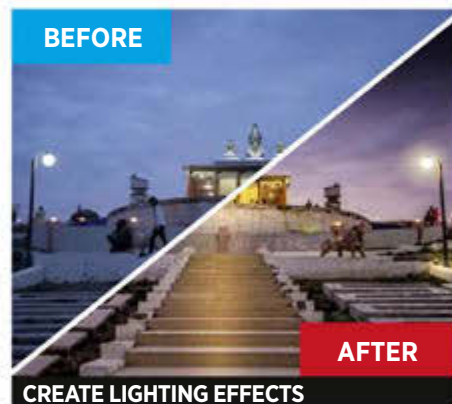
TURN THAT NOISE DOWN!

Remove grain from high ISO pics [p80](#)



RESTORE THE COLOURS YOU SAW

Inject vibrancy into flat scenes [p82](#)



CREATE LIGHTING EFFECTS

Add atmosphere and drama [p86](#)



ON YOUR FREE PHOTOSKILLS CD

LEARN PHOTOSHOP THE EASY WAY WITH EXPERT VIDEO LESSONS FROM THE DIGITAL PHOTO TEAM

RESCUE YOUR SHOTS

YOU'VE NEVER HAD IT SO GOOD! The RAW format is the ultimate tool that photographers have wanted for generations. It offers a way to maximise the quality and enhance the look of your shots *after* you've taken them. That not only means that great pictures will look even better, it also means that shots you haven't quite nailed in the field can be rescued in post-processing.

Pictures don't quite make the grade for a number of key reasons, and all these are addressed in the tutorials starting over the page. Whether your shot suffers from exposure problems, colour issues, ineffective composition or poor lighting, the extensive

range of controls in RAW conversion software can be used to make dramatic improvements. Read on to identify the problems and discover the solutions, watch the video lessons, then practice the techniques with the start images. Once you've done this, take a look through your own pictures, load them up and start making immediate improvements. Once you've learned these brilliant techniques, you'll never look back, and the quality of your photography will come on in leaps and bounds.

What is RAW?

RAW is a special file format available on all D-SLRs and CSCs. It's growing in popularity on

compacts and bridge cameras, and even a few smartphones offer it. A RAW file consists of the image taken directly from the camera's sensor. Unlike a JPEG though, it hasn't had any in-camera processing applied.

All cameras shoot RAW files to begin with, but most then apply colour, White Balance, contrast and sharpening information, before compressing the picture to save space. With a JPEG, these cornerstones of photography are embedded and fixed. With a RAW, all these values are floating, and you use processing software to make all the decisions yourself. This takes more time, but it puts you in full control of the images you create.

ADOBE CAMERA RAW THE CORE FEATURES

ZOOM TOOL

Zoom in to get a more detailed view. Hold Alt and click to zoom out.

HAND TOOL

Allows you to scroll around the picture when zoomed in.

WHITE BALANCE TOOL

Click on a neutral tone in the pic to adjust the colours on the scene.

CROP TOOL

Drag over the pic to remove areas outside the bounding box.

STRAIGHTEN TOOL

Draw a line along horizontals or verticals to rotate and crop.

RED EYE TOOL

Remove red eye from flash pictures by drawing around the affected eyes.

PREFERENCES MENU

Allows you to set options for the way you want your RAWs to be processed.

ZOOM LEVEL

Shows how much you are zoomed in or out and can be adjusted in the box.

TOOLBAR

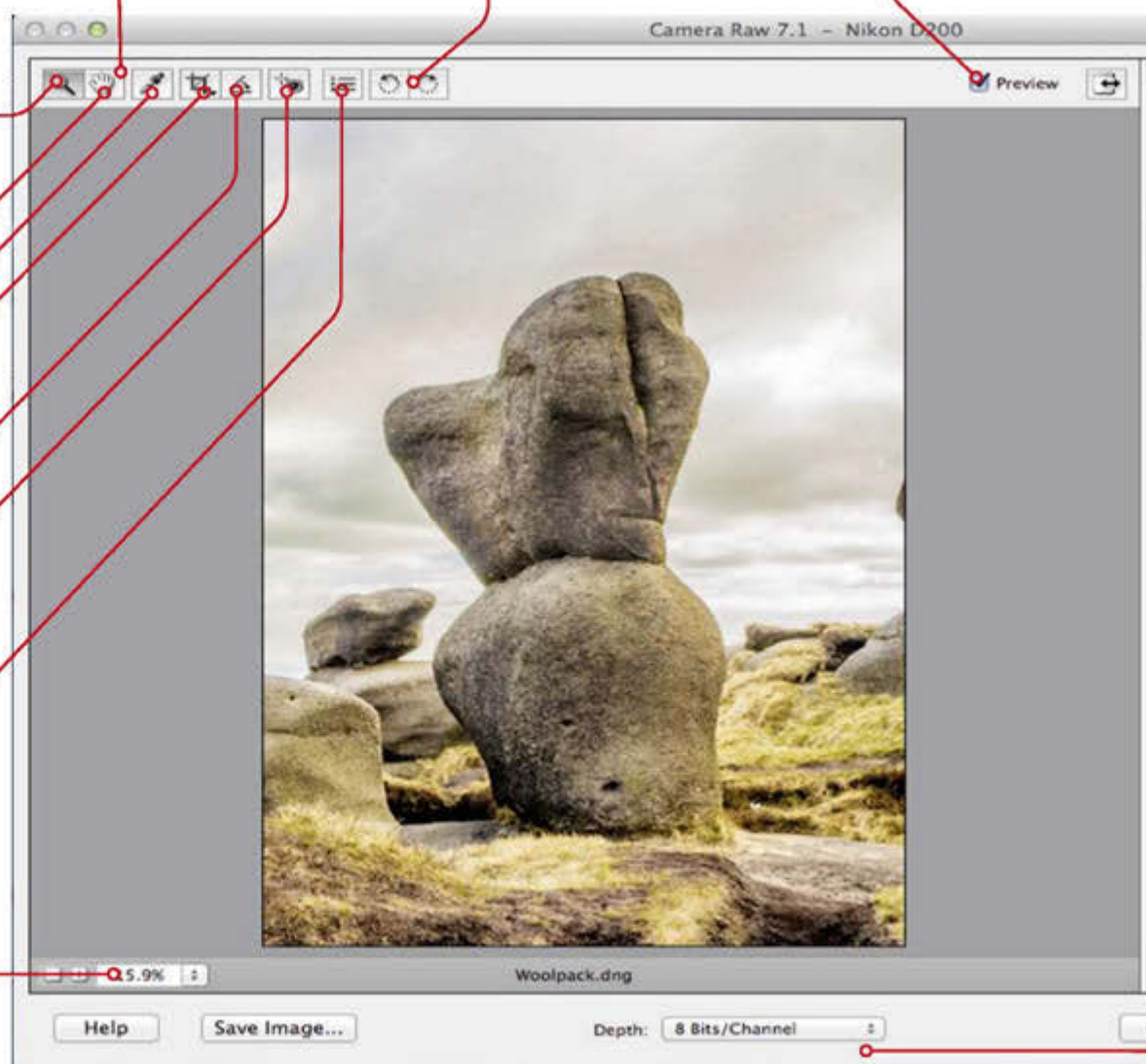
Allows you to select the general tool for the changes you want to make. Elements has 9 tools, whereas Photoshop offers more options with 15 tools.

ROTATE TOOLS

Turn the pic 90° to the left or right when you've shot in vertical format.

PREVIEW BOX

Leave this ticked to see the effect of your adjustments immediately on the image.



WITH RAW!

Learn with **DIGITAL PHOTO**

1 Watch the video lesson

Load the disc, click on the video you want to watch, and our experts will walk you through.



2 Follow the steps

Open the start images into your software and follow the tutorial in the magazine.



3 Produce a pro image

Complete the project to create a great image, then put the technique you've discovered into practice on your own shots. It's a fantastic way to learn!



FULL SCREEN

Click this to occupy the entire screen with the Camera Raw interface. Click again to return the interface to the size last used.

CONTROL PANEL

Where all changes are made. Sliders are used for adjustments, and these vary depending on which control tab is selected.

HISTOGRAM

The exposure graph of the processed image. This is updated live when you adjust any of the sliders below.

SHOOTING INFO

The original aperture, shutter speed, ISO and lens settings used by the camera when taking the displayed pic.

CONTROL TABS

Give access to different sliders for further adjustments. Elements has 3 tabs, whereas Photoshop has 10 and Lightroom has 8 for more control.

COLOUR CONTROLS

White Balance gives preset options like on a camera, and Temperature allows you to customise the colours from 2000 to 50,000° Kelvin for a cooler or warmer colour balance in the image. Tint adjusts the green/magenta cast for fine-tuning.

EXPOSURE & TONE CONTROLS

These adjust the brightness and contrast of various tonal ranges in the pic.

CLARITY

Increases or decreases midtone contrast to give sharper or softer-looking pics.

VIBRANCE

Makes the least-saturated colours more or less intense.

SATURATION

Makes all colours more or less intense.

OPEN IMAGE

Loads the processed RAW file into Photoshop/Elements.

DEPTH

Allows you to output your RAW file to Elements/Photoshop as an 8-bit or higher-quality 16-bit file.

RAW editing software options



PHOTOSHOP ELEMENTS 13 £60

Photoshop Elements is the stripped down version of Photoshop targeted at enthusiasts. It offers the core features that photographers need and sports a similar interface to the professional Photoshop CC. Along with Layers, Layer Masks and a host of Selection tools, Elements offers a basic but effective version of Adobe Camera Raw for editing and enhancing RAW files.



PHOTOSHOP CC £8.57 MONTHLY

Photoshop CC (Creative Cloud) is the professional version of Photoshop. It's only available as a subscription, so you pay £8.57 monthly to use it. The deal includes Lightroom 5 so there's no need to buy this separately. As well as the tools in Elements, Photoshop offers Curves, the Pen tool, and Color Balance. It also features an advanced RAW converter, which shares the same RAW engine as Lightroom 5.



LIGHTROOM 5 £100

Photoshop Lightroom is a RAW workflow package offering a pro-level RAW converter and image management features for cataloguing your shots. It shares the same RAW conversion functions with Photoshop CC, but has a different interface. Lightroom doesn't feature Layers for creating shots with multiple images, but many photographers who don't want to subscribe to Photoshop CC find a combination of Lightroom and Elements meets their needs.

► For more info on the above packages, visit www.adobe.com/uk

Getting your RAWs to work

The RAW files from cameras are unique to the specific model. Though RAWs from a particular camera brand will share the same file extension (like .CR2 for Canon or .NEF for Nikon) that doesn't mean they'll be compatible with your software. In fact, if your camera is more recent than your software, then you won't be able to see or read the RAW file.

One way around this is to update your software to the latest version. This may carry an upgrade cost, depending on how old your software is. A free option however is to convert the RAW files using the latest edition of Adobe DNG Converter. This turns RAWs into the universal .DNG format, compatible with any RAW software.

> www.adobe.com/downloads/updates.html



BRING BACK THE DETAIL IN THE DARK



There's always something lurking in the shadows! Discover how to reveal it and save your underexposed pics from the bin!

TECHNIQUE & PICS BY JON ADAMS

At a glance

YOU'LL LEARN How to correct the exposure on a shot that's too dark and bring back the detail

YOU'LL NEED Photoshop or Elements

TIME REQUIRED 20 minutes

DIFFICULTY LEVEL Medium



On the disc

VIDEO LESSONS Watch as Jon runs through this exciting technique on your computer screen.

START IMAGES The RAW file Jon used for this project is in the Start Images folder. It's called *Woolpack.dng*

ALL IT TAKES IS AN OVERLY BRIGHT SKY or the wrong metering mode, and you can find yourself with a dark, underexposed subject rather than the crisp, detailed shot you wanted. This happens because a camera can't handle the same brightness range as your eyes, and using its light-metering system, it makes a judgement on which part of the shot to set the exposure for.

After you've taken the picture, the screen on the back of the camera will confirm whether you've captured detail in the area you want, but it's surprising how often photographers don't check their results when they're caught up in the joy of rattling off shots!

But don't worry, because provided you shoot RAW, all is not lost. Because RAWs hold far more image data than JPEGs, a surprising amount of detail is hidden away in the darker tones. With some careful processing, you can bring it back and get the shot you hoped you had taken, rather than settle for the one you actually got!

The editing involved is straightforward and can be achieved in Photoshop, Lightroom or the more stripped-down version of Camera Raw found in Elements. The Basic tab is where all the action occurs, so load up the RAW file from the Start Images folder to practise the technique, then find one of your own underexposed RAW files, and breathe new life into it.

BEFORE

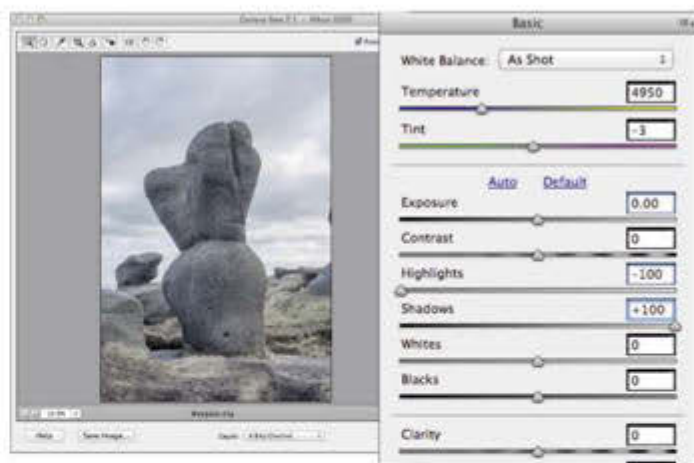


This huge gritstone boulder, eroded into a natural sculpture is heavily textured, but in this shot, the camera's meter has been fooled by the bright sky, and has rendered the rock as a silhouette.



1 Check to see how much detail lies hidden in your shadows

Open your underexposed RAW file into Elements or Photoshop, or use *Woolpack.dng* from the Start Images folder. The Adobe Camera Raw interface will launch. The first task is to ascertain whether the shadows in your image have enough detail lying within the dark recesses, so before doing anything else, make sure the Basic tab is selected and move the **Exposure** slider to the right. If you see detail return in the dark areas, then your shot can be saved! In the example image, detail is restored at around **+3.00** stops.



2 Compress the highlights and brighten the shadows

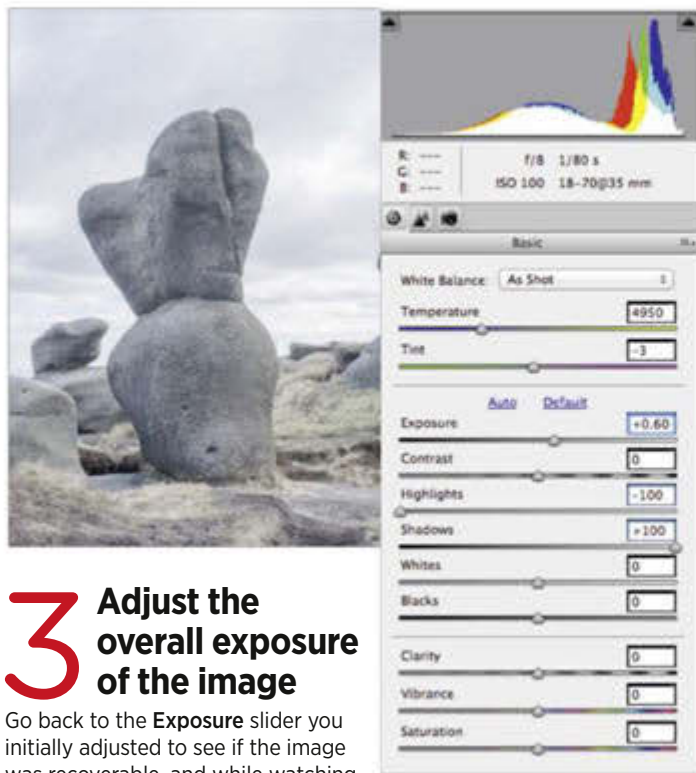
Return the **Exposure** slider to **0** and then drag the **Highlights** slider all the way to the left to a value of **-100**. This slider compresses the brightest tones in the picture, and restores as much highlight detail as possible. With the highlights brought down, now drag the **Shadows** slider all the way to the right to **+100**. This will bring out detail from the darker tones in the image. The picture won't look very good yet, but you'll have extracted a good amount of detail that wasn't visible in the original image.

A large, dark, textured rock formation, possibly a sea stack or a natural rock sculpture, stands prominently on a grassy cliff. The rock has a complex, organic shape with a large, rounded base and a more intricate, multi-lobed top. The texture of the rock is highly detailed, showing various cracks, crevices, and mineral deposits. The surrounding landscape is a mix of green grass and patches of bare earth. In the background, the ocean is visible with white-capped waves breaking against the shore. The sky is filled with heavy, grey clouds, creating a dramatic and somewhat somber atmosphere. The overall composition is a full-body shot of the rock formation, emphasizing its scale and unique shape.

AFTER

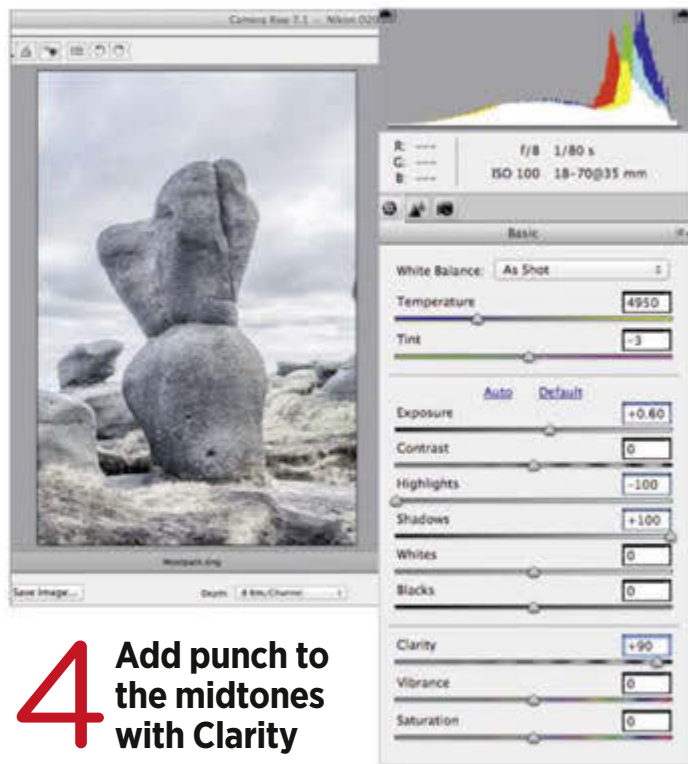
Though drastically underexposed in the original, the image has been transformed thanks to the power of RAW.

Photoshop Genius RAW TO THE RESCUE



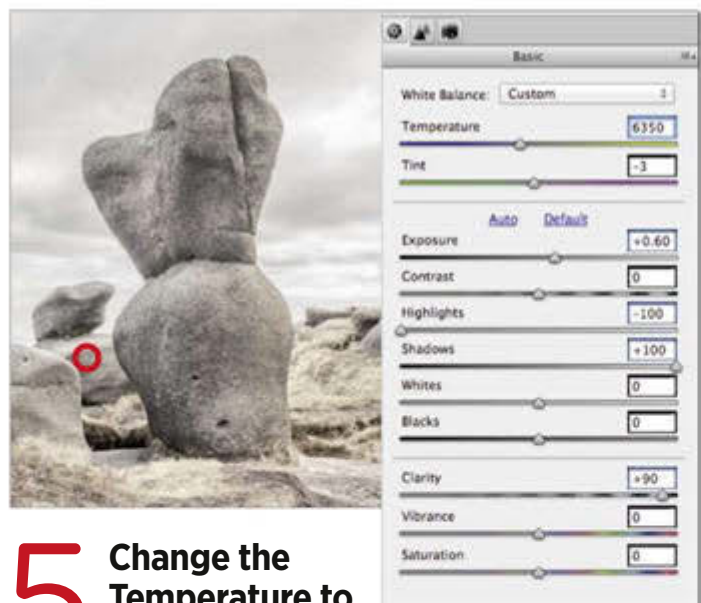
3 Adjust the overall exposure of the image

Go back to the **Exposure** slider you initially adjusted to see if the image was recoverable, and while watching the Histogram at the top-right of the interface, move it to the right until the tones in the graph reach the right-hand edge. If you push it too far you'll blow the highlights to pure white, so take it easy. On the example image, a setting of **+0.60** was used. Considering an exposure boost of +3.00 stops was needed to reveal the detail in the dark areas when you first assessed the image, you can see how effective the adjustments made to the Shadows and Highlights sliders have been.



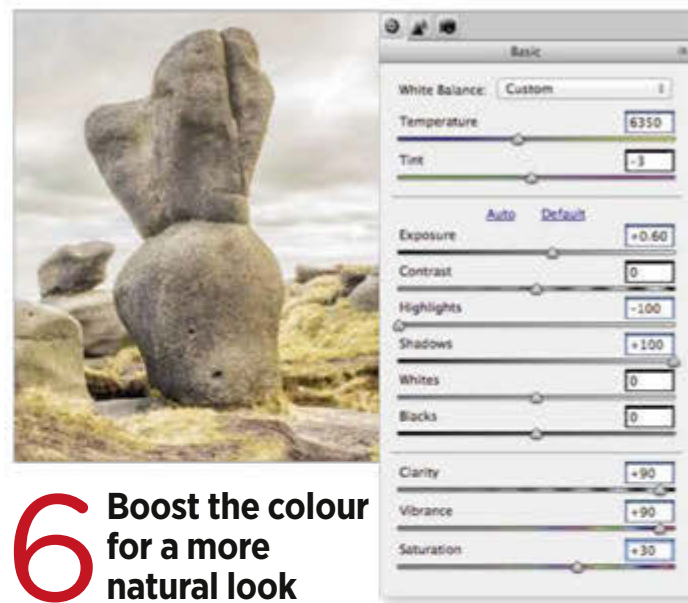
4 Add punch to the midtones with Clarity

Now go down to the **Clarity** slider and move it to the left and right to see the effect it has. This slider boosts or reduces the contrast in the midtones of an image, and gives a powerful sharpening effect when moved to the right, or a soft-focus look when moved to the left. Most images benefit from a boost in extra midtone contrast, but how far you push it will depend on the content of your picture. With the rather extreme example used here, **Clarity** was increased to a really high value of **+90**.



5 Change the Temperature to warm up the scene

The tonality of the image has improved dramatically, but the fairly aggressive changes made so far have left the colours looking unnaturally cool. To address this, go to the **Temperature** slider at the top, and move it to the right to add some warmth. This controls the White Balance of the shot, and a setting of **6350** was appropriate for the example image. If you click where it says **Custom** in the **White Balance** box above, you'll set a range of Presets, similar to those you'd find on a camera. A colour temperature of 6350 Kelvin is close to the *Cloudy* setting, which is appropriate for the overcast conditions.



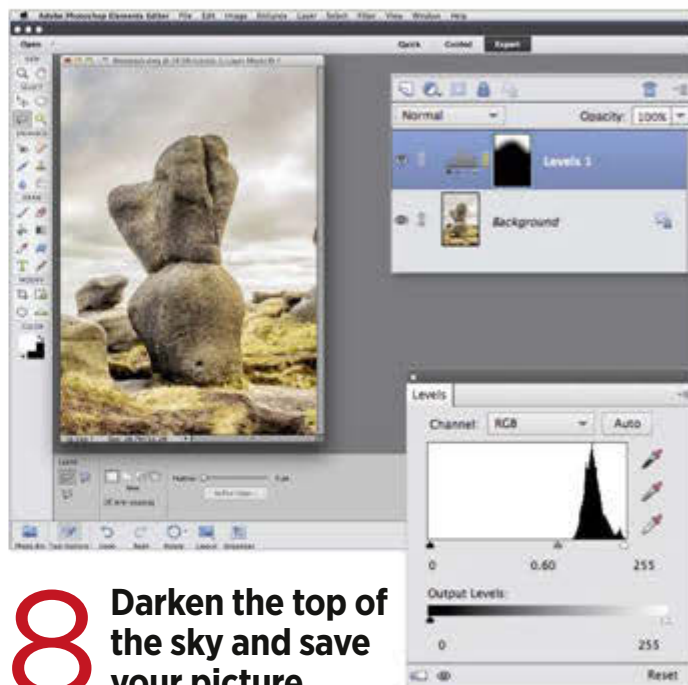
6 Boost the colour for a more natural look

Though the colour balance is looking better, the colours themselves are very muted, so to enhance them, move the **Vibrance** slider to the right. This controls the least-saturated colours in the image, and needs to be pushed quite strongly. A setting of **+90** was used in the example picture. With the Vibrance adjustment made, now move on to the **Saturation** slider. This control governs the intensity of all the colours in the image, so has to be used with more restraint. A setting of **+30** was used to bring some life into the grass and the gritstone. When adjusting Vibrance and Saturation on your own images, keep a close eye on the effect your changes have, and avoid pushing them to values where colours block out and reveal no detail.



7 Get some black in the shadows

The picture is now in a different league to the near-silhouetted starting point, but look at the Histogram and you'll see that there's no data at the extreme left of the graph. The left side represents black in the image, and with no black tones present, the picture will look washed out and lacking in contrast. To correct this, go to the **Blacks** slider, and while holding the **Alt** key, move it to the left. As you do, you'll see the areas where pure black starts to appear in the darkest shadows, and also see a line 'grow' at the left of the Histogram, confirming the presence of black. A setting of **-75** was used on the example image.



8 Darken the top of the sky and save your picture

With the shot rescued in RAW, click **Open Image** to load it into the regular Photoshop or Elements interface. The sky is looking a bit bland, so to fix this, select the **Lasso tool** and make a Selection around the top of the sky, avoiding the rock. Click on the **Refine Edge** button in the Tool Options bar, and move the **Feather** slider to **200px** to soften the edge. This will help the next adjustment blend in seamlessly with the existing picture. Click **OK**, then go to **Layer→New Adjustment Layer→Levels**. Click **OK** and in the Levels palette, move the midtone slider to the right to darken the sky and add extra drama. Finally, go to **File→Save As**, and save your restored shot under a new name.

Expert advice Getting the right sliders to appear in Adobe Camera Raw

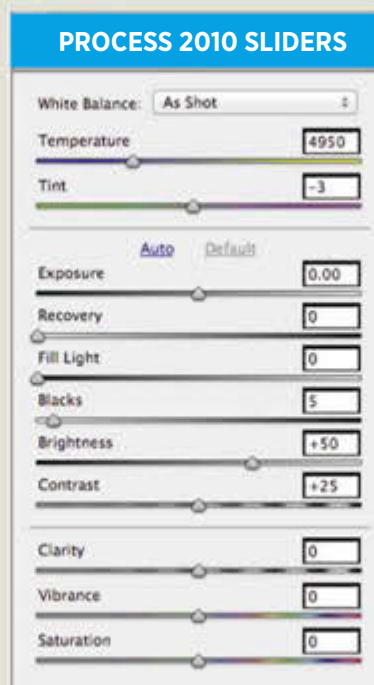
As enhancements are made to the Adobe Camera Raw interface, the controls and sliders are refined and updated. If the sliders in the Basic tab in your version of ACR are different to those featured in the step-by-step, then you need to check which Process version of the software you are using. To do this, click on the Camera Calibration tab (it has a camera icon) and under **Process**, there's a drop-down menu that'll show the options open to you. The most recent will be at the top of the list and will be indicated as **Current**.

If your software is a few versions old, the **2010** process may be the most recent you can use. The sliders in this version have different names and operate in a slightly different fashion to those in the latest **2012** process.

Exposure, **Contrast**, **Saturation**, **Blacks**, **Vibrance** and **Clarity** remain consistent, though the **Clarity** control is more refined on the 2012 version.

The controls which have been updated and renamed are **Recovery**, **Fill Light** and **Brightness**.

If you can only access the 2010 process, then **Recovery** is used to restore highlight detail. It's similar to the **Highlights** slider in the new version, but is dragged to the right rather than the left to compress the brightest tones. **Fill Light** does a similar job to **Shadows**, and is dragged to the right to brighten shadow detail. **Brightness** differs from **Whites** with regard to the tones on which it operates, but it can be adjusted in a similar way. Use the 2012 process if you can, but bear these points in mind if your software is limited to the 2010 process.



Older versions of Photoshop and Elements may give a different set of sliders in the basic tab, but these can be used in similar ways to the latest version.

RECOMPOSE & GET SOME PERSPECTIVE!



Fix lens flaws and fine-tune your framing to perfect your shots

TECHNIQUE & PICS BY JON ADAMS

NO MATTER HOW MUCH YOU SPEND on a lens, the laws of physics dictate that it'll suffer from optical defects. These show themselves in the form of distortion, where straight lines appear bent, and in chromatic aberration, where coloured fringing can be seen on high-contrast edges.

These aren't the only problems facing photographers though, as human error can rear its ugly head, too! It requires a meticulous setup with tripods and spirit levels to capture scenes stacked with vertical and horizontal lines, and keeping these true in camera is rarely feasible when you're shooting handheld. The RAW interface in Photoshop and Lightroom offers some brilliant tools that allow you to remedy lens defects and composition errors, and this technique takes you through the whole process of using them.

The more advanced tabs used here aren't available in Elements, but by making the basic corrections in RAW (Steps 6-8 below), you can then open the image and go to **Filter→Correct Camera Distortion**. Here, you'll find a suite of tools that work in a similar way to the methods described in Steps 3-5.

At a glance

YOU'LL LEARN How to add a new foreground element to an existing shot to create an improved image

YOU'LL NEED Photoshop (full version) or Lightroom

TIME REQUIRED 10 minutes

DIFFICULTY LEVEL Easy



On the disc

VIDEO LESSONS Watch as Jon runs through this essential RAW technique on your computer screen.

START IMAGES The RAW file Jon used can be found in the Start Images folder. It's called *Corridor.dng*

BEFORE



Captured in a large, Las Vegas hotel, the symmetry and vanishing point of this long corridor draws in the viewer well, but the composition and colours are in real need of improvement.

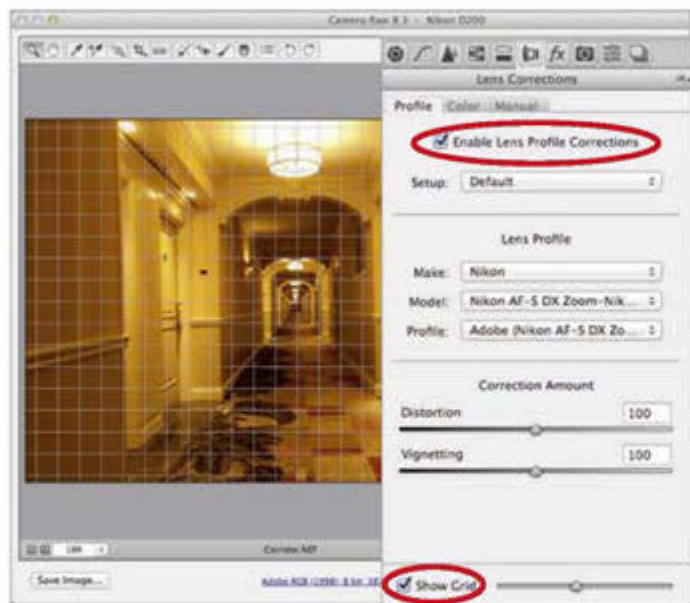


AFTER

With the lens distortion, wonky shooting angle and overly warm colours corrected in RAW, the picture becomes an architectural shot to savour.

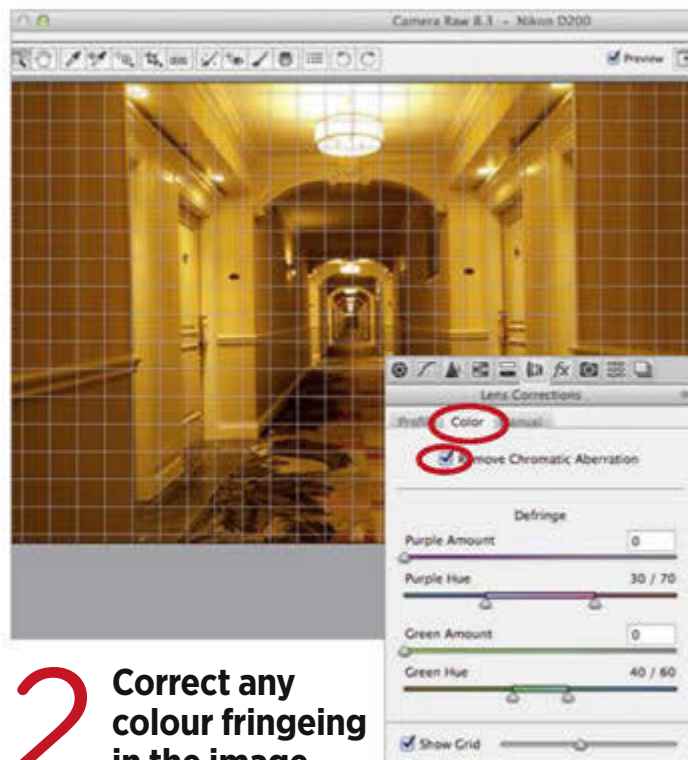


Photoshop Genius RAW TO THE RESCUE



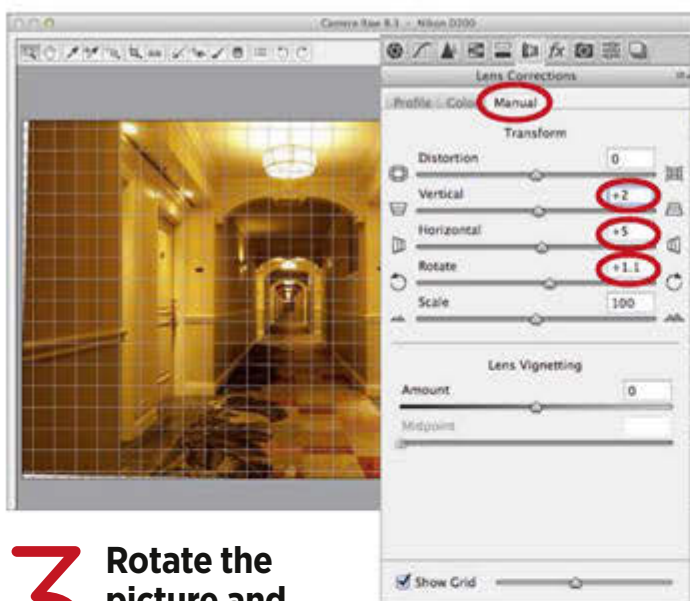
1 Open your image and correct any lens distortion that's present

Open a RAW file with a skewed composition into Photoshop (full version) or use *Corridor.dng* from the Start Images folder. With the example image, there are a number of problems, but these can be rectified using some of the special RAW features in CS6 or CC. In the Camera Raw interface, click on the **Lens Corrections** tab and under **Profile**, tick **Enable Lens Profile Corrections** to fix the immediate distortion problems inherent in all lenses. If your lens doesn't appear, you can select it under the **Lens Profile** boxes below. Now tick **Show Grid** at the bottom – you can change the size of the grid using the slider alongside to best suit your image.



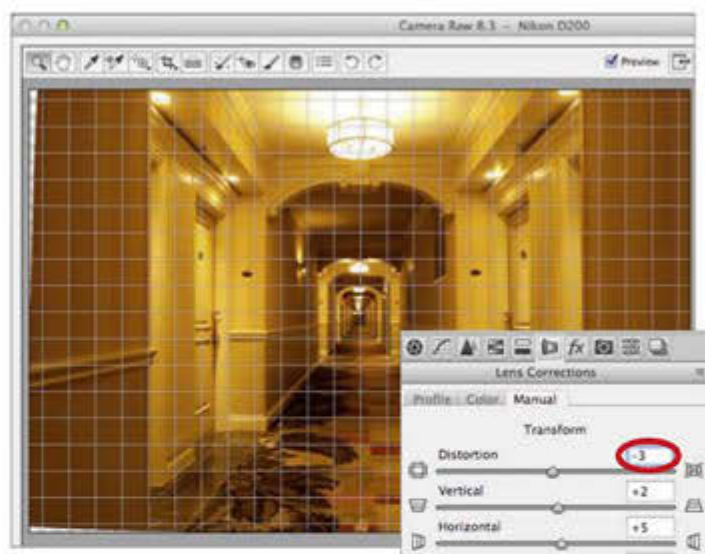
2 Correct any colour fringing in the image

Click on the **Color** tab next to **Profile**, and in the new dialogue box, tick **Remove Chromatic Aberration**. This option cures any colour fringing on high-contrast edges automatically, based on what Photoshop knows about the lens used. If you need to take further action, or if your Lens Profile wasn't listed, zoom in to a high contrast edge and use the **Defringe** sliders to adjust it manually. The lens database is vast though, so you're unlikely to need to do this.



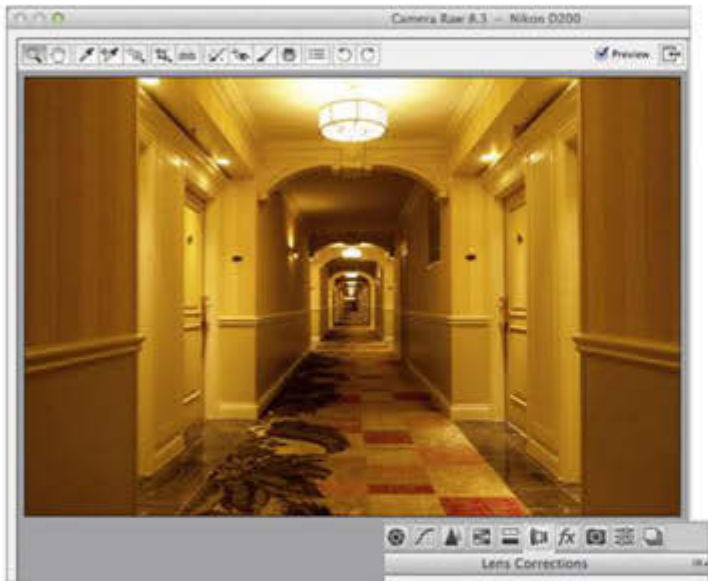
3 Rotate the picture and change your perspective

With the optical defects cured, now click on the **Manual** tab. Here, you can make more dramatic adjustments that effectively change the angle you took the shot from. You can also compensate for any sloping horizons by rotating the image and can zoom in to reframe the scene. Start with the **Rotate** slider and adjust it until your horizontal lines are true. A setting of **+1.1** was used here. Next move the **Horizontal** slider to **+5** to get the frame's perspective as accurate as possible, and then move the **Vertical** slider until the vertical lines in pic correspond to the lines on the grid. A setting of **+2** was used on the example image.



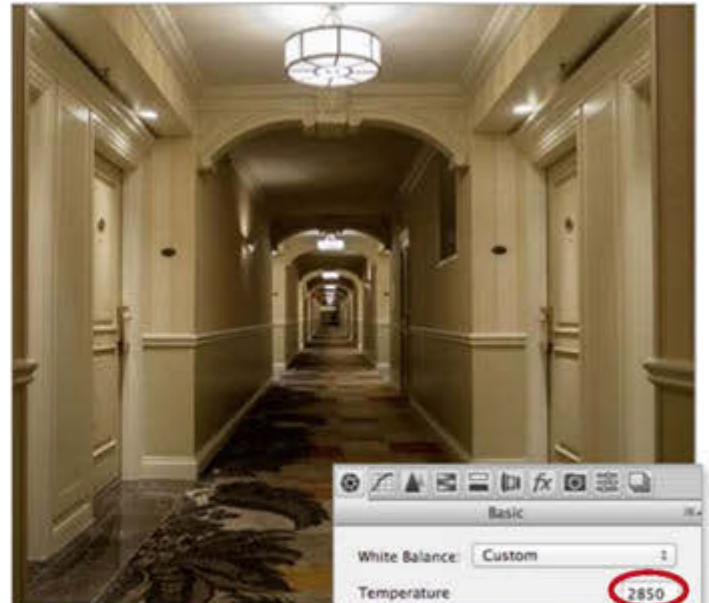
4 Control distortion to straighten your horizontals and verticals

The **Distortion** slider is similar to the one under the **Profile** tab you used in Step 1, but under the **Manual** tab you can make much more dramatic changes. Moving it left will increase the barrel distortion, and taking it to the right will produce pincushion distortion. You can use it in an exaggerated fashion for a creative effect, but here, the aim is to get a distortion-free result. Watch your horizontal and vertical lines as you move the slider to and fro, and get the lines in your image as true as possible, using the grid for reference. A setting of **-3** worked best for the example image.



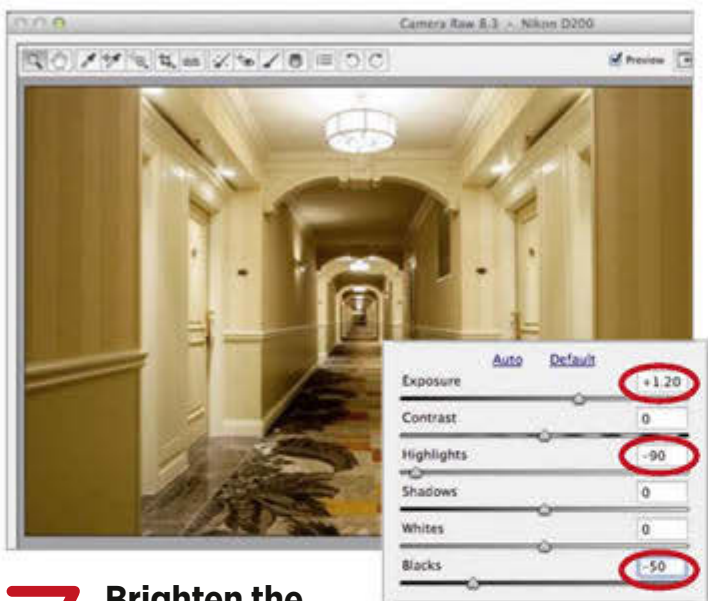
5 Zoom in to remove any missing edges

The last slider to use is **Scale**, and this allows you to effectively 'zoom in' to the scene removing any missing edges that may have occurred when making other adjustments. The example image required a setting of **+103**, though if you've rotated or distorted your image more dramatically, you'll need to go in a bit further with a higher value. With the corrections made, you can now switch off the grid by unticking the **Show Grid** box.



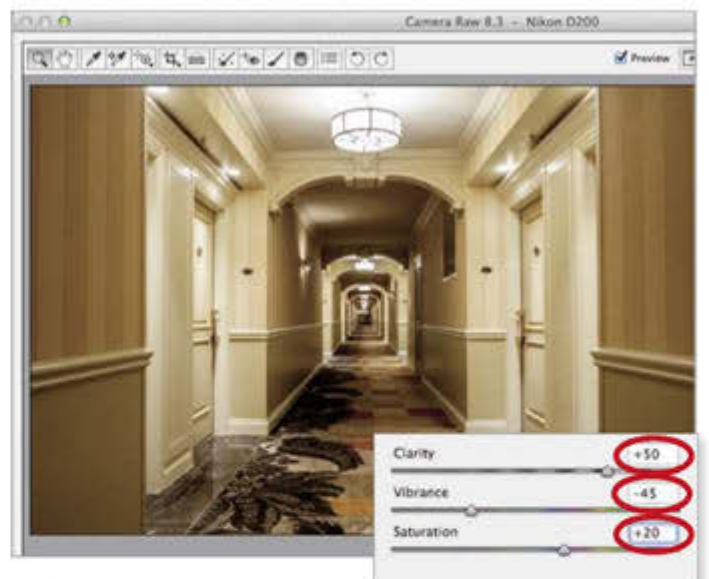
6 Correct the colours with a new White Balance setting

The picture is now much more precise in its composition, but still needs some work on the colour, contrast and exposure balance. Click on the **Basic** tab, and in the **White Balance** box, select **Tungsten** from the drop-down list. Now move the **Tint** slider towards magenta to a value of **+10**. This cures the overly warm colours in the scene and gives a more realistic look. The bright light at the top of the frame is out of balance with the rest of the scene, so to reduce its impact, move the **Highlights** slider to **-90** to restore detail to the bright tones.



7 Brighten the scene and boost the darkest tones

With the highlights reined in, the scene is a little too dark, so to compensate for this and lift the overall brightness, increase the **Exposure** slider to **+1.20**. The **Shadows** and **Whites** sliders don't require any changes for this image, as any adjustments makes the picture either too bright or too gloomy. But there is a need for some rich tones at the lower end of the scale. To boost the very darkest areas and inject some extra mood, pull the **Blacks** slider back to **-50**. This adds a welcome contrast boost, making any changes to the **Contrast** slider unnecessary in this instance.



8 Increase the definition and enhance the colours

To give the image a little more definition around the edges of the midtones, increase **Clarity** to **+50**. This gives extra sharpness and 'bite'. The last two controls can be used to subtly adjust the colours. **Vibrance** only affects areas with the lowest intensity of colour, whereas **Saturation** boosts or cuts every colour, so to take the slightly yellow look out of the white paintwork, reduce **Vibrance** to **-45**. To restore the colour to the rest of the scene, increase **Saturation** to **+20**. With the changes complete, click **Open Image** to load the pic into Photoshop, then save it via **File → Save As** in the format of your choice.

6 OF THE BEST FEATURES OF RAW

Raw conversion software has a huge range of brilliant tools that will help you improve and enhance your pictures, as well as speed up your processing time. Here are some of our favourites, found in Elements, Photoshop or Lightroom...

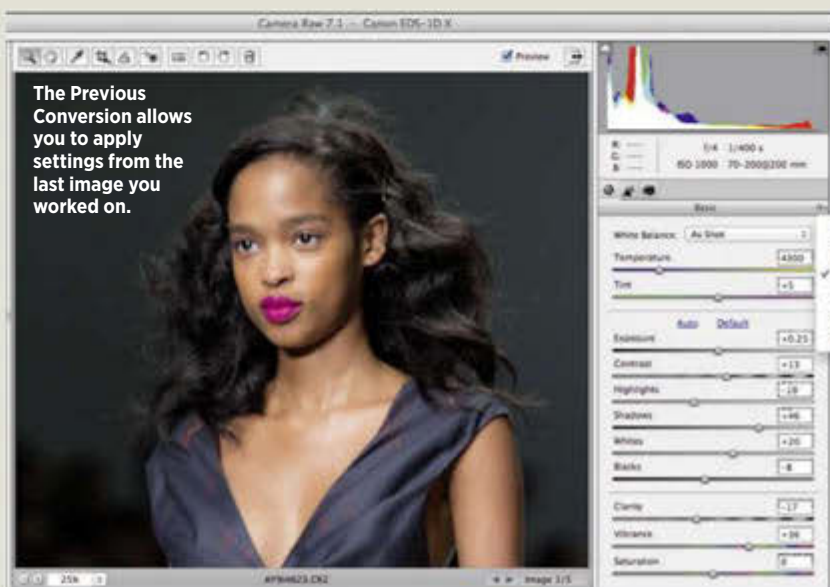
1

Add a graduated filter

The **Graduated Filter tool** can be found in Photoshop CS6/CC and Lightroom, and emulates the look of a graduated filter over the lens. It's both easy to use and highly versatile. You can add a neutral grad to darken the sky, or can even add coloured grads to introduce a hint of blue (or anything else) to the heavens.

To use it, open a RAW file into Photoshop, and select the **Graduated filter tool**. Drag your mouse over the area where you want to add a grad, and you'll see green and red dotted lines appear. The green line shows where the grad effect begins and the red shows where it ends. Adjust these to suit your image, and then work through the list of options in the control panel to create the effect you want. The options are very similar to those found in the Basic tab, so you can control the look of the graduated portion of the shot.

Use the Graduated Filter tool to restore exposure balance to both the land and sky.



2

Save time with Previous Conversion

If you've spent some time working on a RAW file, the idea of going through the whole process again on similar shots from the same location will be frustrating. All the last settings you've used to convert a RAW file are stored in memory however, so to apply them in one fell swoop, just click the fly-out menu at the top right of the control panel and select **Previous Conversion**. This is a great time saver, and makes converting RAWs a breeze. In Bridge (the advanced file browser supplied with Photoshop CS6/CC) you can apply your

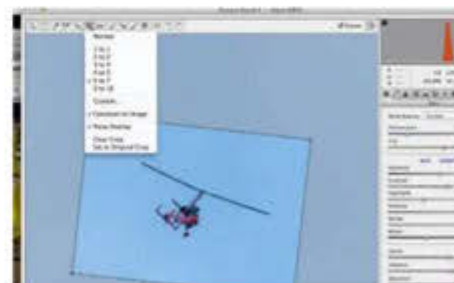
previous RAW settings to as many files as you like. After making a RAW conversion, go into Bridge and **Ctrl+click** on all the files you want to apply the same settings to. Once they're highlighted, right-click on one and select **Develop Settings** from the drop-down list. If you're working in Lightroom you can press the **Previous** button underneath the **Develop** tab to apply the settings from the last conversion. Or to process multiple images, select them in the thumbnail bar by pressing **Ctrl+A** and the **Previous** button will now say **Sync**. Click on this to process multiple images at once.

3

Crop tool

The **Crop tool** is far more advanced than you'd think and is equipped with a variety of extra functions. Click and hold the mouse on the tool itself (press **C** for a shortcut in Photoshop, press **R** in Lightroom) and extra options appear, allowing you to set the type of crop you want. You can crop to a specific aspect ratio, such as the regular 3:2, a 16:9 widescreen or a 1:1 square format, or leave it unconstrained by selecting **Normal**. Once you've made the crop, you can rotate it to level

the horizon or improve composition by holding the cursor outside the bounding box and dragging the mouse. Camera Raw will automatically keep the crop inside the confines of the image as you rotate, so you won't get blank areas if you stray outside the edge. Once you've got the crop you want, double-click inside the bounding box to see a live preview of the cropped image. Nothing from the original RAW file is lost when you do this. If you want to get back to the full view, select the **Crop tool** and hit the **Esc** key.



The Crop tool allows you to reframe your shots simply by clicking and dragging across the image.

4

Remove distractions

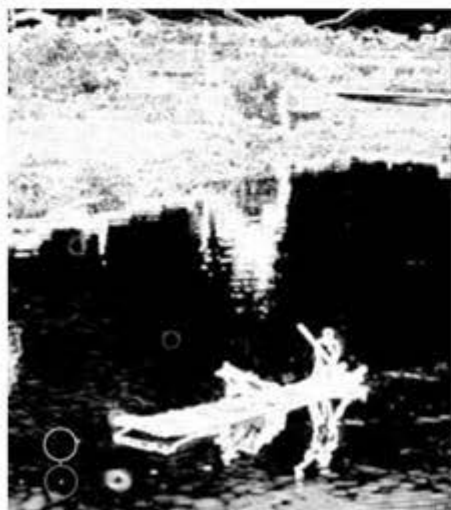
The **Spot Removal tool** isn't in the Elements version of Adobe Camera Raw, but can be found in Photoshop CS6/CC and Lightroom. It works in a similar way to the Clone Stamp tool or Healing Brush found in the regular interface of Photoshop/Elements. If there's a distraction or blemish on the image that you want to remove, you can get rid of it as part of the RAW conversion process. Because RAWs never change, it'll still be on the original file, but will be edited out in the RAW converter and won't appear when you open the file.

To use it, open your RAW file and zoom in on a blemish like a spot of sensor dirt in the sky. Select the **Spot Removal tool** (shortcut **B** in Photoshop, **Q** in Lightroom) and in the control panel, set the **Type** to **Heal**. Now click on the centre of the blemish and drag to create a circular selection that covers the problem area. Release the mouse and the software will automatically find a suitable 'clean' area to use as a source. If you want, you can change this by dragging the source circle to another part of the image.

To see the effect, untick the **Show Overlay** box. If you're using the tool in Lightroom, you get the option to **Visualize Spots**, and this gives a black & white outline mask to help you identify sensor dust spots in areas that are otherwise hard to see.



The **Spot Removal tool** is perfect for getting rid of blemishes caused by dust particles on the sensor.



5

Banish red eye

Red eye is a result of having the flash too close to the lens axis. In dim lighting, our pupils open up to let in more light, and the flash bounces off the back of the eye to give the devilish red colour. The **Red-eye Removal tool** allows you to get rid of it at the RAW conversion stage. Select the tool and drag a box over the eye. Photoshop will detect the red pupil, and automatically change it back to black.

AFTER

Accurately set your **White Balance** with a single click.



BEFORE

6

Refresh your colour scheme

White balance sets the overall colour palette for a photograph. On a RAW file, the colours are floating rather than fixed, so you can adjust the colour temperature to change the look of the shot when you edit. Even if you've set the wrong white balance preset on your camera, you can still change it later in RAW, with no adverse effects on the image.

To use it, open a RAW file, and then select the **White Balance tool** (shortcut **I** in Photoshop, **W** in Lightroom). Click anywhere on the image preview and you can reset the white balance of the entire scene based on that point. Choose an area that you want to be of neutral tone (white, grey or black) and the colours in the scene will be reset. You can click as many times as you want, and quickly find the point that gives the best results.

Although useful for any type of shot, the tool is especially handy for portraits. If you get your subject to hold a grey card for the first picture of a session, you can target this with the WB tool, and get accurate skin tones in one click. You can then apply the same setting to all other pics taken at the same location, saving bags of time.



Using a 'grey card' to accurately take a **White Balance** reading means you can export the same colour settings to the rest of your images.

GET A PERFECTLY BALANCED EXPOSURE



Bring highlights and shadows into harmony to get the tonal range you saw when you pressed the shutter

TECHNIQUE & PICS BY DAN MOLD

THE HUMAN EYE IS FINELY TUNED to see bright highlights and deep shadows all in a single scene. Cameras, however, have a more limited range and can only expose for light or dark areas. This comes as a bit of a Catch 22 – expose for a bright sky and you’ll get an underexposed foreground, but do the opposite and you’ll capture the land but blow out the sky.

So how do you create the scene that you saw? The answer lies in RAW. A single RAW file is packed with exposure data that allows you to extract detail from both the highlights and the shadows. The result is a picture with a lifelike dynamic range. It’s possible to do this in the full version of Photoshop or Lightroom using the Adjustment Brush, but there’s an Elements-friendly route which involves making two separate RAW conversions and blending them together. We cover both methods in this technique, and the result gives you a perfectly exposed scene.

At a glance

YOU’LL LEARN How to create a balanced exposure from a single RAW file

YOU’LL NEED Photoshop or Elements

TIME REQUIRED 10 minutes

DIFFICULTY LEVEL Easy



On the disc

VIDEO LESSONS Watch as Dan runs through this exciting technique on your computer screen.

START IMAGES The RAW file Dan used can be found in the Start Images folder. It’s called *Landscape.dng*



BEFORE

The original RAW is a fairly lacklustre landscape. Neither the foreground nor the background sky detail are well exposed but this can be fixed using RAW.



AFTER

The overall dynamic range of the image has been increased by extracting the highlight and shadow detail from a single RAW file, and blending them together.



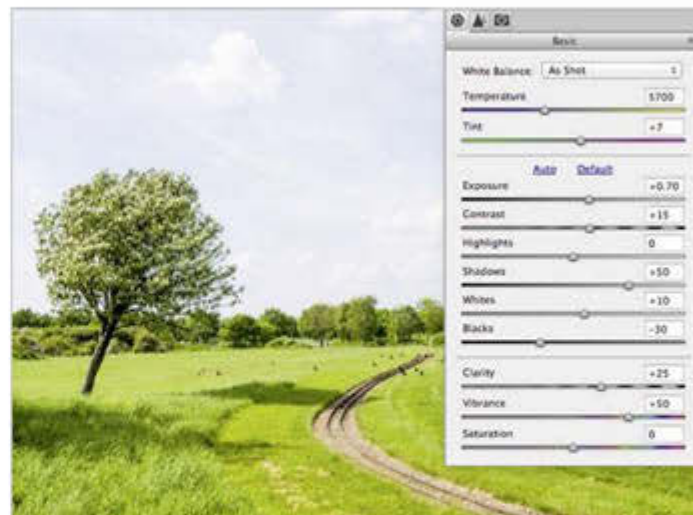
Photoshop Genius RAW TO THE RESCUE

ELEMENTS MAKE A SPLIT RAW



1 Open your RAW image and adjust the sliders to retain the sky highlights

Open your RAW image into Elements or use *Landscape.dng* from the Start Images folder. On the right of the Adobe Camera Raw interface you'll see the Basic tab where you can make adjustments to the exposure and tones. In this first RAW conversion you need to adjust the exposure to suit the bright sky detail. Doing so will underexpose the foreground but that will be addressed later. For now, reduce the **Exposure** to **-0.40** and increase the **Contrast** to **+15**. Pull the **Highlights** all the way down to **-100** to reveal the cloud detail and push the **Whites** up to **+50**. The **Blacks** can be set to **-10**, while **Clarity** can be increased to **+25** and **Vibrance** to **+50**. With the sky looking good, click on **Open Image**. Now go to **File→Save As** and save it under the name *Sky.jpg*.



2 Open the RAW again and change the sliders to suit the foreground

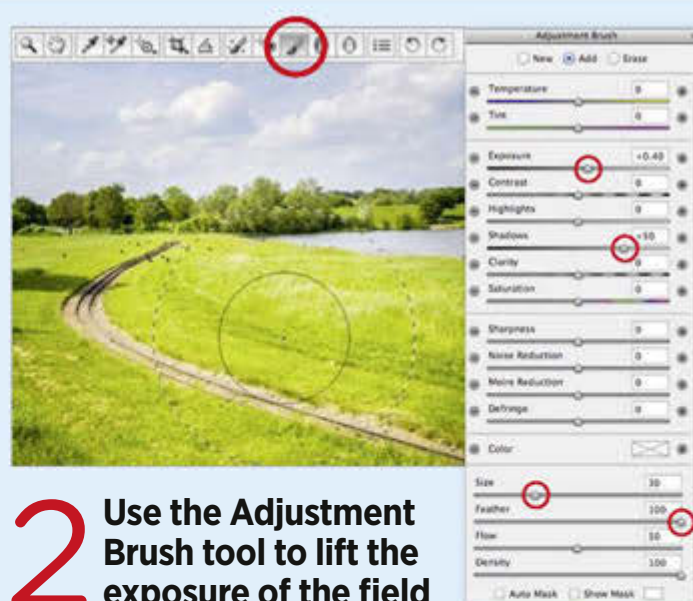
Leave the sky conversion on screen, then go back to **File→Open** and open the same *Landscape.dng* file once more. In Adobe Camera Raw, adjust the sliders so that this time, the foreground becomes correctly exposed. At the top-right of the control panel you'll see a button you can click to reveal a fly-out menu. Here, select **Camera Raw Defaults** to reset the sliders back to their original values. Now brighten the shot by setting **Exposure** to **+0.70** and increasing **Contrast** to **+15**. Push **Shadows** up to **+50** and **Whites** up to **+10**. Decrease **Blacks** to **-30**, then increase **Clarity** to **+25** and **Vibrance** to **+50**. When your foreground is much improved, click on **Open Image** to load the second RAW conversion into Elements.

PHOTOSHOP USE THE ADJUSTMENT BRUSH



1 Open the shot into Adobe Camera Raw

Open *Landscape.dng* into the full version of Photoshop and it will be loaded into Camera Raw. To reveal the highlight detail in the sky, reduce **Exposure** to **-0.40**, increase **Contrast** to **+15**, pull **Highlights** down to **-100** and push **Whites** up to **+50**. Drag **Blacks** to **-10**, **Clarity** to **+25** and **Vibrance** up to **+50**. The sky is now nicely toned but the foreground is underexposed.



2 Use the Adjustment Brush tool to lift the exposure of the field

You'll find the **Adjustment Brush** in the Toolbar; select it, or you can hit the shortcut **K** to make it active. Increase the **Exposure** slider to a value of **+0.40** and push the **Shadows** up to **+50**. No effect will be seen on the image yet, because you need to paint this change onto the part of the shot you want to adjust. But before doing this, make sure the **Feather** slider is set to **100** to give a soft edge, and then change the brush **Size** to something appropriate to the area you're painting using the square brackets keys. Now carefully paint over the foreground of the picture. You'll see it become brighter.



3 Put both RAW conversions into the same image document

With both images open in Elements you now need to place them into the same document. This will allow you to blend the exposures together. The foreground conversion is currently the active picture, so hit **Ctrl+A** to select it, followed by **Ctrl+C** to copy it. Now hit **Ctrl+W** to close it down as it's saved in memory. The sky conversion will now reappear, and all you have to do is hit **Ctrl+V** to paste the foreground on top. Select the **Polygonal Lasso tool**. Zoom in tightly on your shot with **Ctrl+Plus** and start to click around the area of the foreground you want to keep – in the example image it's the tree and horizon. Click around all of the foreground and you'll see marching ants surrounding the area.



4 Blend the images together using a Layer Mask

The foreground is selected and it's now time to mask off or 'hide' the overexposed sky to reveal the darker sky from the Layer beneath. Click on the **Refine Edge** button and set the **Feather** slider to **5px**. Drag the **Shift Edge** slider to **-25%**, then hit **OK**. In the Layers palette (**Window→Layers**) click on the **Add Layer Mask** icon. The Selection is active so it's transferred to the new Layer Mask, but if you look closely there are a few areas that could do with tidying up. Click on the **Brush tool** and change the **Opacity** to **20%**. Make sure your brush is **Black** and paint over any haloes to remove them. When the blend looks natural, go to **Layer→Flatten Image** and save the image via **File→Save As**.



3 Refine the exposure adjustment and save the picture

The foreground will be looking good but you may have painted over some of the sky at the horizon. To fix this, click on **Erase** at the top of the Adjustment Brush panel to rub out any parts of the changes you don't want. Before erasing, make sure that **Size** is set quite small – a value of **5** means you can be precise. All that's left is to paint over the brighter areas. Zoom in tightly to see them better by holding **Ctrl** and click on the part of the pic you want to magnify. With the changes complete, click **Open Image**, and after the shot has loaded into the regular interface, go to **File→Save As**.

EXPERT ADVICE Make multiple adjustments on one RAW



The Adjustment Brush can be used multiple times on a RAW file, and each new use is identified with a 'pin' icon. To apply a new Adjustment Brush, click **New** at the top of the Adjustment Brush panel. You can use this method to build up an effect or apply an entirely different change to another part of the image. Hit **V** to hide the pin icons and get a clear view. Another useful shortcut is to hit **P** – this will toggle the effect of your Adjustment Brush on and off. While using the Adjustment Brush, holding **Alt** will switch to the Eraser so you can clean up as you go.

IT'S TIME TO TURN DOWN THE NOISE

At a glance

YOU'LL LEARN How to suppress digital Noise in pictures captured at a high ISO value

YOU'LL NEED Photoshop or Elements

TIME REQUIRED 10 minutes

DIFFICULTY LEVEL Easy



On the disc

VIDEO LESSONS Watch as Jon runs through this essential rescue technique on your computer screen.

START IMAGES The image Jon used is called *Temple.dng* – you'll find it in the Start Images folder.



Control unsightly speckling in low-light shots using the controls in Camera Raw

TECHNIQUE & PICS BY JON ADAMS

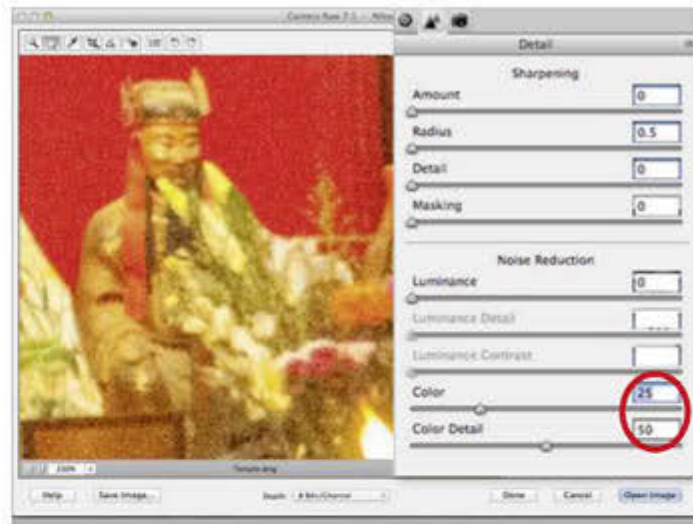
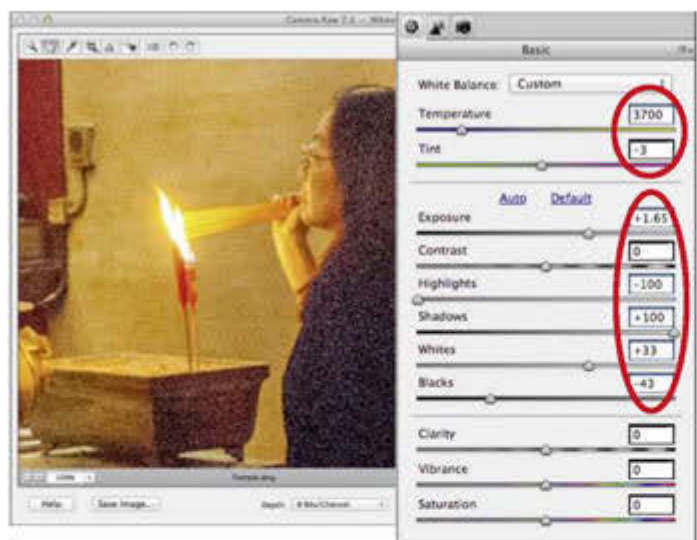
TODAY'S DIGITAL CAMERAS can take great shots in very dim lighting. From pictures at night to candle-lit interiors, they excel at plucking colour and detail out of the darkest scenes. To get the best quality though, you need to use a tripod and set a low ISO value. This gives a longer exposure time, but the reward is great images. So what happens when you're faced with low-light conditions, but can't use a tripod? The shot here, taken inside a Hong Kong temple, is a case in point. Although photos were allowed, tripod use wasn't practical.

Erecting a set of sticks would have obstructed the movement of those visiting and would have been disrespectful to those worshipping. The only solution was to shoot handheld, and to make the camera much more sensitive to light. Using a high ISO setting achieves this, but the trade off for the extra sensitivity comes in the form of digital Noise – a grainy, unattractive speckling.

The good news is, Noise can be controlled and suppressed in RAW, so you can restore the image quality of low-light shots taken handheld.

BEFORE

Taken handheld in very dim lighting, this shot was captured with a 18-70mm lens at an aperture of f/4.5. Setting an ISO value of 1600 introduced Noise into the pic, but gave a fast enough shutter speed of 1/30sec.

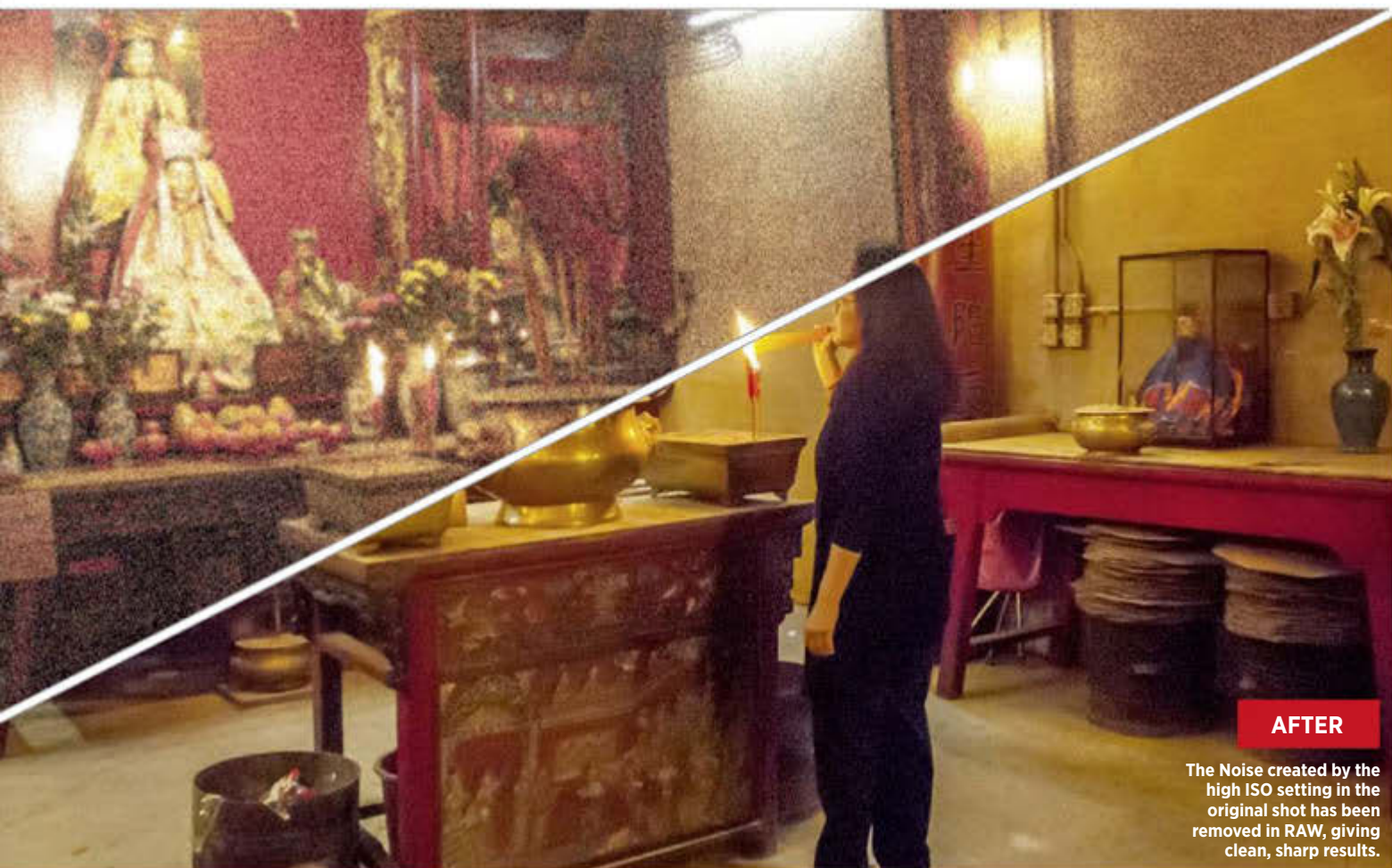


1 Open your picture into Camera Raw and improve the overall look

Open one of your own RAW images, taken at a high ISO speed of 1600 or more, or use *Temple.dng* from the Start Images folder. In the interface, make sure the **Basic** tab is selected, and move the sliders beneath to improve the colours and tones. For the example image, **Temperature** was set to 3700, **Tint** to -3, **Exposure** to +1.65, **Highlights** to -100, **Shadows** to +100, **Whites** to +33 and **Blacks** to -43. All other values were left at 0. This improves the overall look immediately, but select the **Zoom** tool and go in tight on the picture, and the ugly speckling called Noise will be very apparent, especially in the shadows and the rich, red colours of the temple's decor.

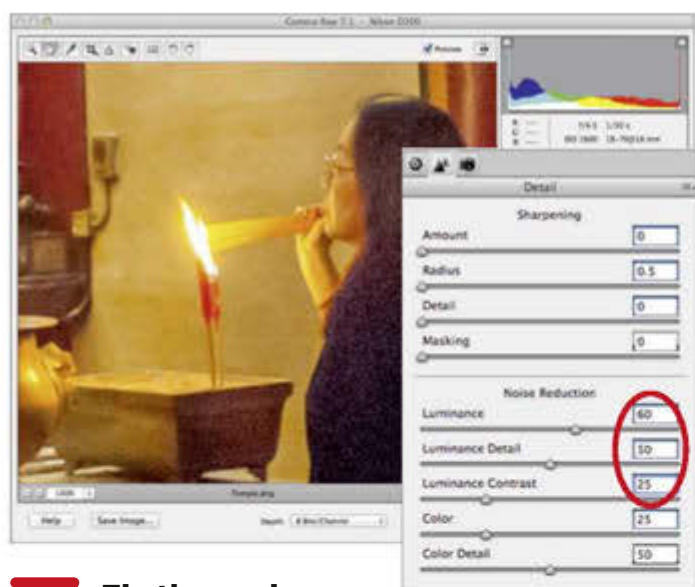
2 Suppress the coloured Noise using the controls in the Detail tab

Click on the **Detail** tab, and a new set of sliders will appear, grouped under **Sharpening** and **Noise Reduction**. To start from scratch, pull them all to the left, so no processing is applied. Select the **Zoom** tool again from the Toolbar, and click repeatedly until 200% appears in the box at the bottom left. Hold the **Spacebar** and drag the image until you reach an area revealing the multicoloured speckling of chrominance Noise. Now move **Color** to the right until the speckling disappears. On the example image, a setting of 25 was used. The **Color Detail** slider beneath controls how the **Color** is applied. High values may bring the speckling back, so try around 50.



AFTER

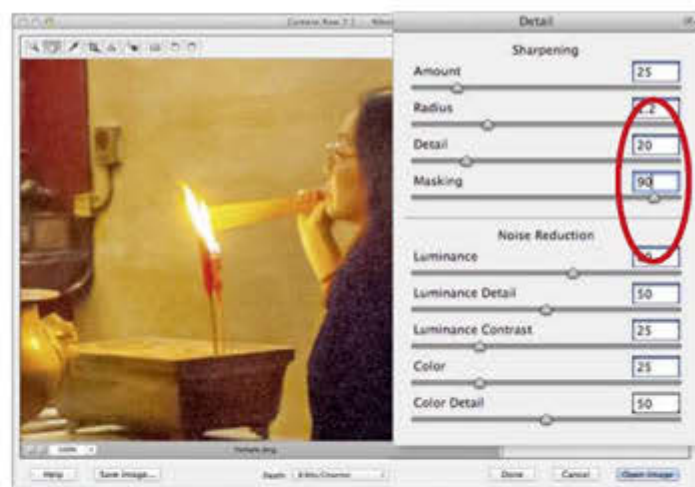
The Noise created by the high ISO setting in the original shot has been removed in RAW, giving clean, sharp results.



3 Fix the grain

With the colour speckling fixed, it's time to suppress the black & white Noise. Scroll to a shadow area where grain is present, and move the **Luminance** slider to the right. As you increase the value, you'll see the grainy effect soften and decrease. Hold **Alt** while doing this, and you'll see the effect in mono to make it more clear. A setting of **60** was used on the example image.

Luminance Detail controls the threshold of the slider above it, with high values showing very fine detail, and low values showing very clean, but rather blurry results. This was set to **50** to give a balance between the two. **Luminance Contrast** was set to a low value of **25** to avoid any mottling or blotchiness in the remaining Noise.



4 Sharpen the results

With the Noise suppressed, the image looks much improved, but all images benefit from a little sharpening. If you intend to do more work on your picture in Photoshop or Elements, such as adjusting colours, boosting contrast or adding Layers, it makes sense to add the sharpening there, so it's applied at the end of the process. If your improved RAW is your final, completed image though, then you can do it now. The **Amount** slider makes edges more defined as the value increases, and was set to **25**. **Radius** governs the size of the edges sharpened, and this was set to **1.2**. **Detail** was kept low at **20** to avoid introducing artefacts, and **Masking** was set high at **90**, so only the most pronounced edges would be sharpened. Hold **Alt** while moving any of these controls to see the effect they have. Finally, click **Open Image** to load the file into Photoshop/Elements.

RESTORE COLOURS TO MUTED SCENES



Image suffering from lacklustre colours? By using RAW, you can bring back nature's vibrancy in just a few simple steps...

TECHNIQUE & PICS BY MATTY GRAHAM

At a glance

YOU'LL LEARN How to control, manipulate and improve the colours in your RAW files

YOU'LL NEED Photoshop or Elements

TIME REQUIRED 20 minutes

DIFFICULTY LEVEL Medium



On the disc

VIDEO LESSONS Watch as Matty walks you through this useful and effective technique on your computer screen.

START IMAGES The shot Matty used can be found in the Start Images folder. It's called *CommonBlue.dng*

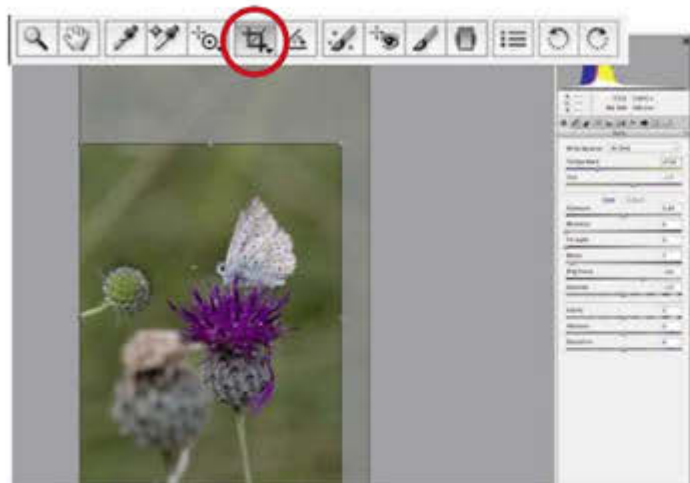
C OLOUR IS OFTEN THE FIRST ELEMENT to catch your eye when you spy a photo opportunity too good to turn down. Shoot in flat, overcast lighting though, and the vibrant colours perceived by your eyes don't always translate to the picture taken by the camera. The original shot of this Common Blue butterfly is a good example of how dull recorded colours can look. In real life the majestic blue markings were plain to see, but because of the overcast conditions the image looks subdued and a far cry from the beautiful reality.

This is one area where shooting in RAW really pays off. Unlike a JPEG, a RAW file allows for more control over colour correction thanks to the amount of tonal information captured. The key to this correction lies in the Hue, Saturation and Luminance (HSL) tabs, that can be used to lighten or darken colours, increase or decrease their intensity or even change them altogether! This editing can be achieved with a standard RAW conversion program like Adobe Camera Raw, or with dedicated RAW software such as Lightroom. With this much control, it's no surprise the HSL tabs are capable of injecting life into dull colours. The HSL controls aren't featured in Elements, so options are a little more limited. However, you can still take control of your colours in the regular interface – see the panel over the page to find out how.

BEFORE

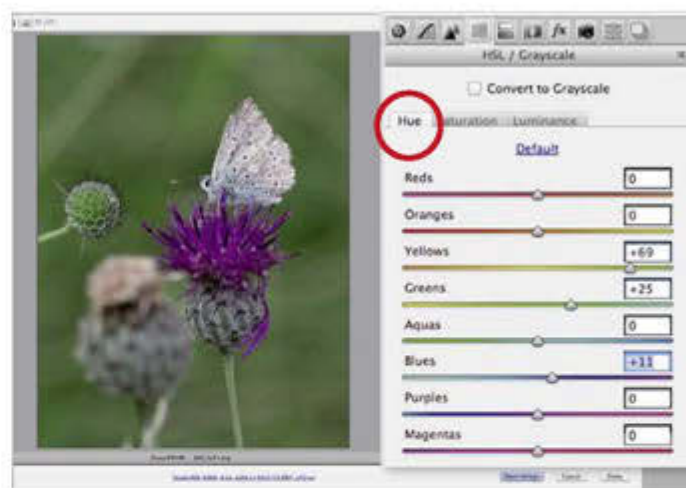


This Common Blue butterfly was captured on an overcast day using a Canon EOS 6D and a 100mm macro lens. A large aperture of f/2.8 was used to blur the background.



1 Crop and assess the image to check which colours need adjusting

Open your RAW file into Photoshop CS6 or CC, or use *CommonBlue.dng* from the Start Images. When the Camera Raw interface launches, the first job is to fine tune the composition. Select the **Crop tool** from the Toolbar at the top, draw out a marquee and hit **Return** to see it previewed. Next, assess the file and work out which colours are important to the scene, as this will determine which colours you edit. In the example image, it's the blue of the butterfly that needs enhancing and the magenta of the thistle that needs toning down.



2 Change colours selectively

Ignore the **Basic** tab for now and click on the **HSL/Grayscale** tab (it's fourth from the left). Above the control sliders, there are three sub-tabs: **Hue**, **Saturation** and **Luminance**. Select **Hue** and you'll see eight individual colour sliders beneath. Dragging any of these right or left will change the hue of your colours – provided the selected colour is featured in the shot. In this case, the grass (which is made up of mainly yellow tones) needs correcting, so drag the **Yellow** slider to **+69** to give it a greener look. To adjust the other colours, push the **Blues** to **+11** and change the **Greens** to **+25**.



AFTER

With some simple colour corrections, the once flat image now bursts with vibrance and punch.

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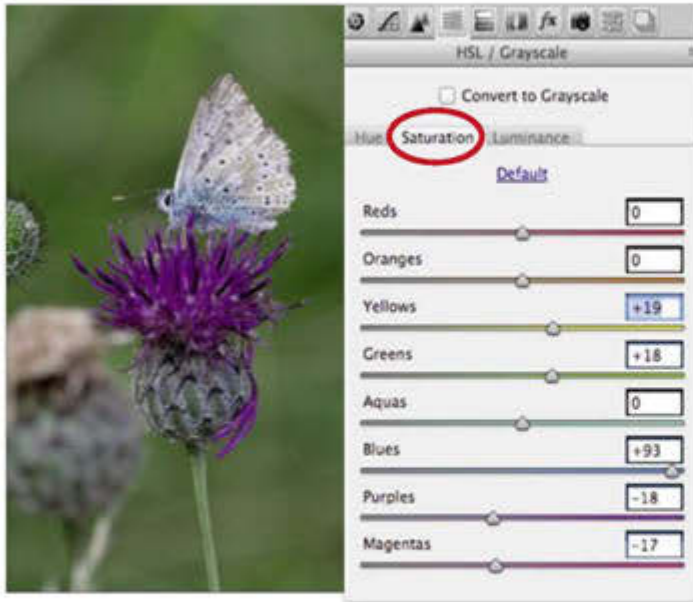
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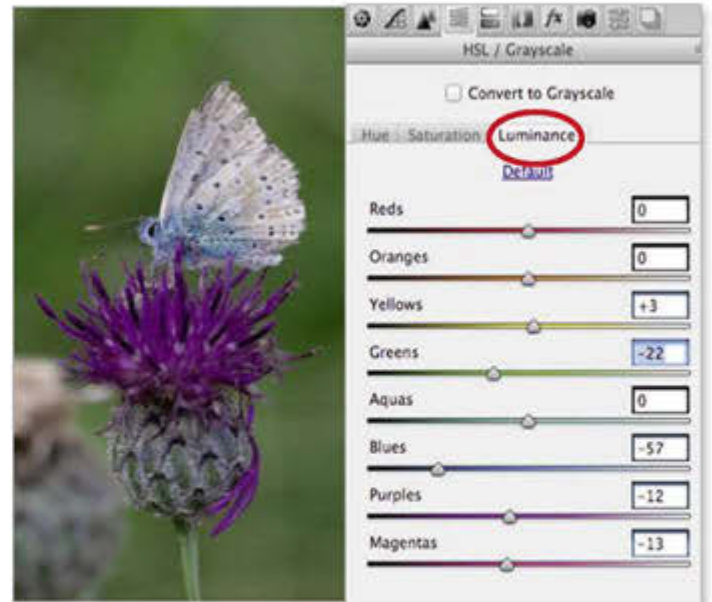
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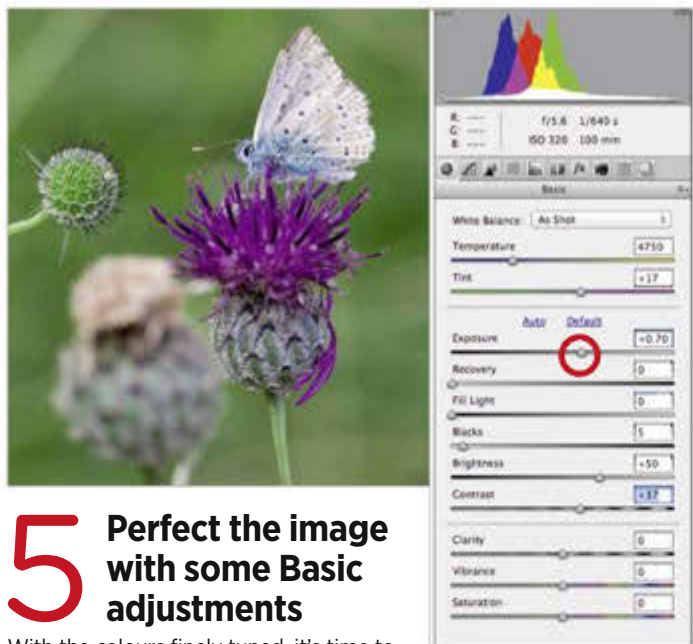
3 Control intensity with Saturation

With the colours set to their correct tones, it's now time to selectively boost or reduce each colour's intensity. Click on the **Saturation** tab and you'll see the same eight individual colour sliders beneath. Increase the Saturation of colours in your main subject (the **Blues** for the butterfly) by dragging the slider to the right. A setting of **+93** was used in the example image. If other colours prove distracting (in this case the **Magentas** in the thistle just below the butterfly), drag the slider to the left to reduce the colour's intensity. In this image, the **Yellows** and **Greens** were also boosted to give a good-looking mix. Don't push the sliders too far or they'll lose detail and cause your image quality to suffer.



4 Brighten or darken individual colours with Luminance

The last sub-tab is **Luminance**. This affects how bright or dark the different colours in your scene appear. Dragging the slider to the right will brighten the colour, and moving it left will darken it. Darkening the colour will lead to more detail being revealed. In the example image, dragging the **Blues** slider to the left reveals extra detail on the underside of the subject's wing, and was set to **-57**. This image also benefitted from the **Yellows**, **Purples** and **Magentas** being brightened. The **Greens** however, were darkened to give a better balanced tonal range in the picture.



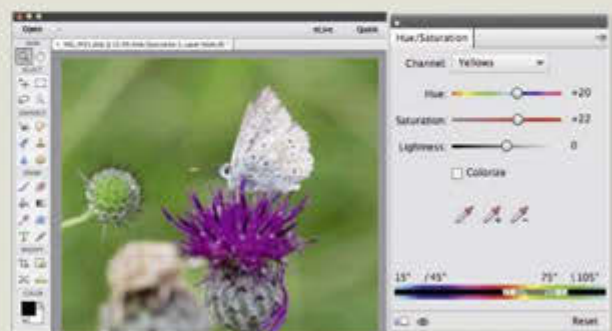
5 Perfect the image with some Basic adjustments

With the colours finely tuned, it's time to address any other issues in the image. Click back on the **Basic** tab and start by looking at the Histogram, which is a graphical display of the picture's exposure information. In the example image, the Histogram reveals that the shot is slightly underexposed, so drag the **Exposure** slider to the right to fix this problem. A setting of **+0.70** was used. The scene could also use a contrast boost, so drag the **Contrast** slider to the right (**+37**). Once you're happy with your adjustments, click **Open Image** to load the picture into the regular Photoshop interface, then save the file in a format of your choice via **File→Save As**.

Control colours in Elements

Editing RAW files in Elements is a little more limiting as the converter doesn't feature the Hue, Saturation and Luminance tabs. However, there are steps you can take to improve your colours in the regular interface. When you open your RAW file in Elements, make your contrast and exposure adjustments in the **Basic** tab of Camera Raw, then click **Open Image**. The picture will be converted and loaded into the normal interface, but make sure have the **Expert** tab selected at the top.

Open the Layers palette (**Window→Layers**) and click on the **Adjustment Layer** icon, selecting **Hue/Saturation** from the list. When the palette appears, click where it says **RGB** and a drop-down menu will display six individual colours. Choose the one you want to change, and adjust its **Hue**, **Saturation** and **Luminance** to achieve similar results as in the RAW conversion.



In Elements, individual colours can be adjusted in the regular interface using the controls in the Hue/Saturation palette.

LIGHTROOM TUTORIAL

EASILY ADD DEPTH TO FLAT LIGHT



Discover how the Radial Filter tool can transform a muted shot to its intended splendour

TECHNIQUE & PICS BY BEN DAVIS

JUST AS A GREAT SONG makes use of the bass and treble, a great image relies on the same thing: light and shade. But sometimes the images we take can be lacking in tonal variety, and a flat, lifeless scene provokes nothing but a shrug from the viewer.

But if you shoot RAW and use the tools at your disposal, it's easy to inject the drama of light and shade back into any scene. The Radial Filter tool allows you to create pools of adjustments, anywhere across your image. This is fantastic for inserting localised effects, which give the illusion of depth to the light, where in fact none may have existed to begin with. It's easy to do, and done right, it will rescue a lifeless RAW and transform it into a compelling and engaging photograph.

At a glance

YOU'LL LEARN How to process and adjust a RAW file, as well as add Radial Filter effects to inject extra drama into the lighting

YOU'LL NEED Lightroom 5 or Photoshop CS6/CC

TIME REQUIRED 15 minutes

DIFFICULTY LEVEL Medium



On the disc

VIDEO LESSONS Watch as Features Editor Ben runs through this entire Lightroom step-by-step on your computer screen.

START IMAGE Try out the technique using the *Mongolian Temple.dng* file. The picture can be found in the Start Images folder.



BEFORE

This underexposed shot of a Buddhist temple in rural Mongolia was taken at dusk – also known as the Blue Hour. The light was cool and flat – not the ideal conditions for dynamic travel shots – but it's easy to transform the shot using the RAW controls in Lightroom.

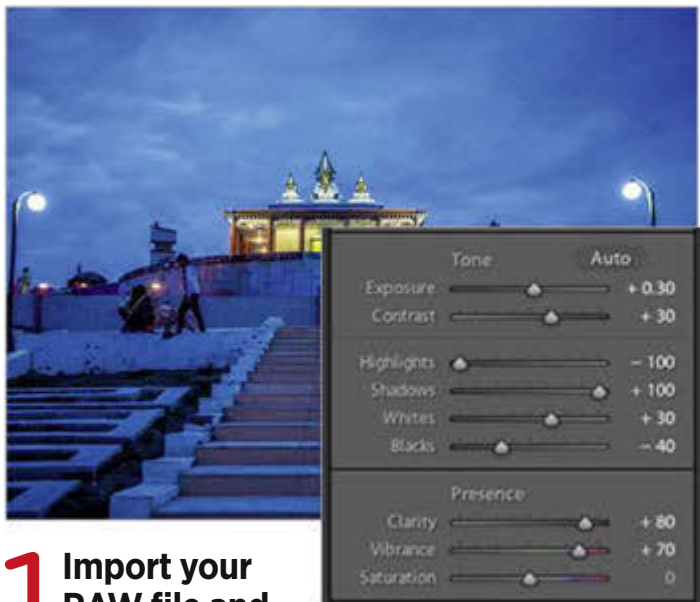


AFTER

Contrast, colour and Radial Filter effects have been added to this RAW file to make it more interesting.



Photoshop Genius RAW TO THE RESCUE



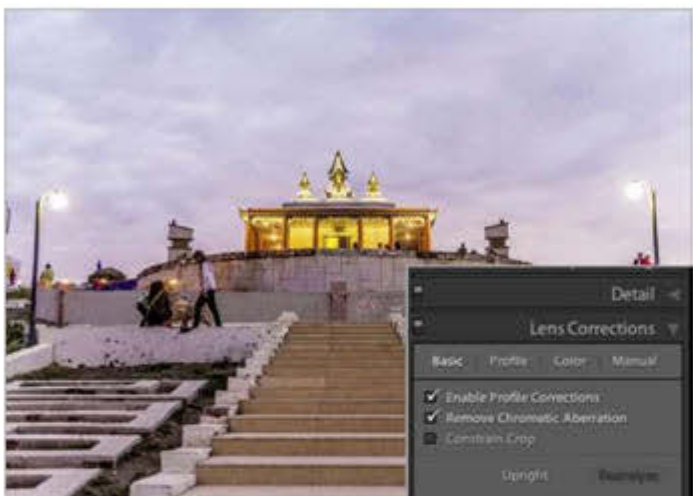
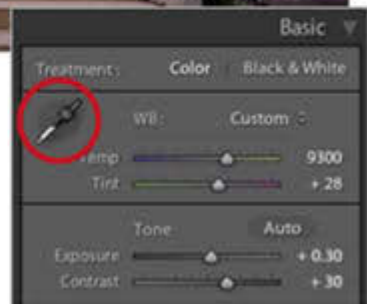
1 Import your RAW file and adjust the tones in the Basic tab

Load your RAW file into Lightroom 5, or use *Mongolian Temple.dng* from the Start Images folder. To do this, click on **Import** at the bottom left of the **Library** module and navigate to the location of the file. Once imported, click on the **Develop** module and select the **Basic** tab. Start off by setting **Exposure** to **+0.30** and **Contrast** to **+30**. Pull the **Highlights** slider to **-100** to restore detail, and push the **Shadows** slider to **+100** to reveal detail in the darker tones. Hold down **Alt** while you adjust the **Whites** and **Blacks** sliders to see a clipping mask. Set **Whites** to **+30** and **Blacks** to **-40**. Change **Clarity** to **+80** – this will boost the overall definition in the image. Push the **Vibrance** slider to **+70** to increase the intensity of the more muted colours in the scene.



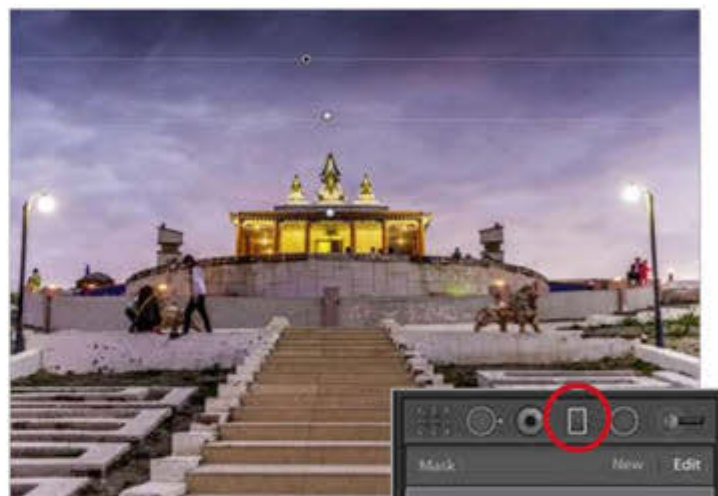
2 Set a custom White Balance

The original White Balance setting of this photograph is far too blue, but as it's a RAW file, the colours aren't locked in at the time of capture, so it's easy to alter in post-processing. Click on the **White Balance Selector** tool in the Basic tab (or press **W** for a shortcut) and then click on a reasonably neutral part of the scene. In the example image, we clicked on the white wall to take a colour sample. This gave a **Temp** slider value of **9300**. To add more warmth and to emphasise the final colours of sunset, push the **Tint** slider to **+28** to add more magenta to the image.



3 Fix any distortions in the Lens Corrections tab

Scroll down to the **Lens Corrections** tab and within the **Basic** panel within, make tick **Enable Profile Corrections** and **Remove Chromatic Aberration**. This will fix any issues like barrel distortion, vignetting and remove colour fringing from backlit edges. To make sure Lightroom has detected the right lens, open the **Profile** panel and check the correct lens details are listed. If you're using the Start Image, make sure it's the **Nikon AF-S 24-70mm f/2.8G ED** lens, but if you're using your own image then check the correct information is displayed in the menus.



4 Add drama to the sky with the Graduated Filter

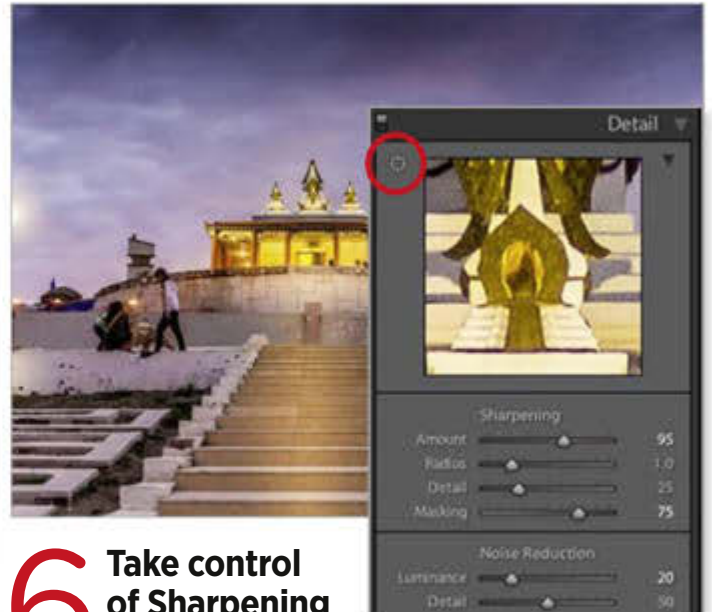
Select the **Graduated Filter** from the Toolbar (press **M**), and in the control panel that opens, set **Exposure** to **-0.75**. Drag a wide graduated filter down from the sky, across the top of the monument. The distance between the three lines indicates the feather area: between this boundary the effect fades from 100% to 0%. Click and drag a second Graduated Filter across the sky, and then a third only over the top of the sky, to increase the effect. Hit **Done** to exit the tool.





5 Use the Radial Filter to add pools of light and tonal depth

The light in the image is a little flat, as the sun had just set and the electronic lights weren't powerful enough to make much impact over the ambient, but that can all be changed with the **Radial Filter tool**. Select the tool from the Toolbar or press **Shift+M** for a shortcut. To create pools of warm light, set the **Temp** slider to **28** and push the **Exposure** slider to **0.42**. This will make the image brighter and warmer wherever the effect is applied, just as if warm light were shining down! Click and drag your first Radial filter at the foot of one of the lamp posts, and if you want to increase the effect, simply right-click on the pin and select **Duplicate**. Apply more Radial filters to around the light sources, and down the steps to add more depth and glow to the image.



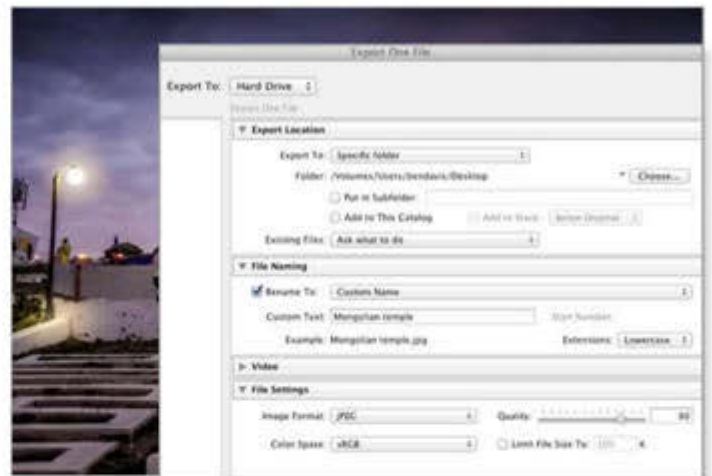
6 Take control of Sharpening and Noise in the Detail tab

Open the **Detail** tab and select the **Target** tool at the top left. Zoom in to a part of the image with fine detail, like the decoration on top of the temple, simply by clicking on it. This will allow you to accurately monitor the sharpening effect you apply. Set the **Amount** slider to **95** to control the overall degree of sharpening. Leave **Radius** set to **1.0** – this controls the size of the edges which are affected by the sharpening. Leave **Detail** at **25** – this controls the appearance of finer details in the image. Hold down **Alt** as you push the **Masking** slider to see an edge mask of where sharpening is applied. Only the white areas are being sharpened. In the example image **Masking** was set to **75**. To control **Noise**, set the **Luminance** slider to **20**, to smooth out some of the grain.



7 Darken the edges with a vignette

Scroll down to the **Effects** tab, where you can add a vignette. This will darken the edges of the frame, which will help pull the eye towards the centre as well as creating the impression of impending nightfall. Start by setting **Style** to **Highlight Priority**, and then pull the **Amount** slider to **-25**. This will darken the edges of your image. Next, set **Midpoint** to **18** to bring the vignette closer to the centre of the frame. Push **Roundness** to **+98** to make the vignette more circular in shape and create a more subtle effect. Set **Feather** to a value of **80** to create a soft edge to the vignette effect, and keep **Highlights** set to **0**.



8 Export the image as a JPEG

When you've finished making adjustments to your image in Lightroom, you'll need to **Export** it. This is because Lightroom doesn't actually alter the images themselves, but instead stores instructions for how to display them. This is why RAW editing is referred to as non-destructive, and why you need to export the pic as a regular file format when you've finished. To do this, click **File→Export** to open the **Export** dialogue box. Choose the **Export Location** and you can navigate to a folder on your computer and set this as the destination for your new file. Under **File Naming**, you can rename your image if you wish. To do this, select **Custom Name** from the drop-down menu and type it in the **Custom Text** box. Under **Image Format**, select **JPEG** and set the **Quality** to **80**. Hit the **Export** button at the bottom right of the window, and a JPEG of your image will be created in its new location.

GET MONEY OFF MEMORY WITH WEX PHOTOGRAPHIC

Digital Photo has teamed up with Wex Photographic to offer you great discounts on photography's must-have tools – memory cards & external hard drives

WORDS BY MATTY GRAHAM

RAW IS PHOTOGRAPHY'S most powerful file format and this issue you've learnt how to make the most of RAW to fix problems like uneven exposures and flat colours. While using RAW is always the best approach, it does capture far more data and that means it takes up more room on your memory cards. Similarly, once you've transferred your shots to your computer, RAWs will take up more space on your hard drive.

To make sure you always have plenty of room to shoot and store your pictures, *Digital Photo* has teamed up with award-winning retailer Wex Photographic to offer a **15% discount on memory cards** and a **5% discount on external hard drives**.

Wex Photographic stocks a huge range of CF and SD cards from the biggest names in the industry, including Sandisk and Lexar, and offers a range of capacities, from 2GB to a staggering 512GB. Wex Photographic's range of external hard drives is equally well stocked, featuring models from leading brands like Lacie, Western Digital and G-techn.

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TWO PHOTOSHOP EXPERTS, ONE IMAGE, 10 MINUTES. THIS MONTH BEN AND ANDY DUEL OVER A PET PORTRAIT

DIFFERENT PHOTOGRAPHERS SEE THE WORLD in different ways. But this viewpoint isn't just restricted to the way a shot is framed up and captured. It extends into post-production techniques too, and it's here that images can be transformed, reinvented or sometimes completely ruined!

With the same pic as a starting point, we got two Photoshop gurus to enhance it, explaining their individual approaches and methods along the way. You can see the results over the page, and they're startlingly different. Though the original pic is clearly recognisable in both images, it's been turned into something new, so see what they did and how they did it, then have a go yourself!



On the CD

VIDEO LESSONS Watch how Ben & Andy completed their techniques in two videos on your computer screen.

START IMAGES The picture is in the Start Images folder, so you can try it, too. It's called *Spaniel.dng*

At a glance

YOU'LL LEARN How to enhance shots

YOU'LL NEED Elements/Photoshop

TIME REQUIRED

10 mins

DIFFICULTY LEVEL

Medium

START IMAGE

This is the RAW file supplied to our experts. It's in the Start Images folder, so you can try enhancing it too.



The rules of engagement

Some guidelines were needed to stop our experts wandering off piste. To keep the playing field level, both contenders were armed with a copy of Photoshop CS6, and were only allowed to use Adobe Camera Raw. No other imaging tweaks were allowed and a time limit of 10 minutes was enforced. This month's judge is *Digital Photo's* Matty Graham. Matty wants this shot of his dog turned into a pic he can frame, and as a photography expert himself, he is well placed to pick a winner from our duo's results.

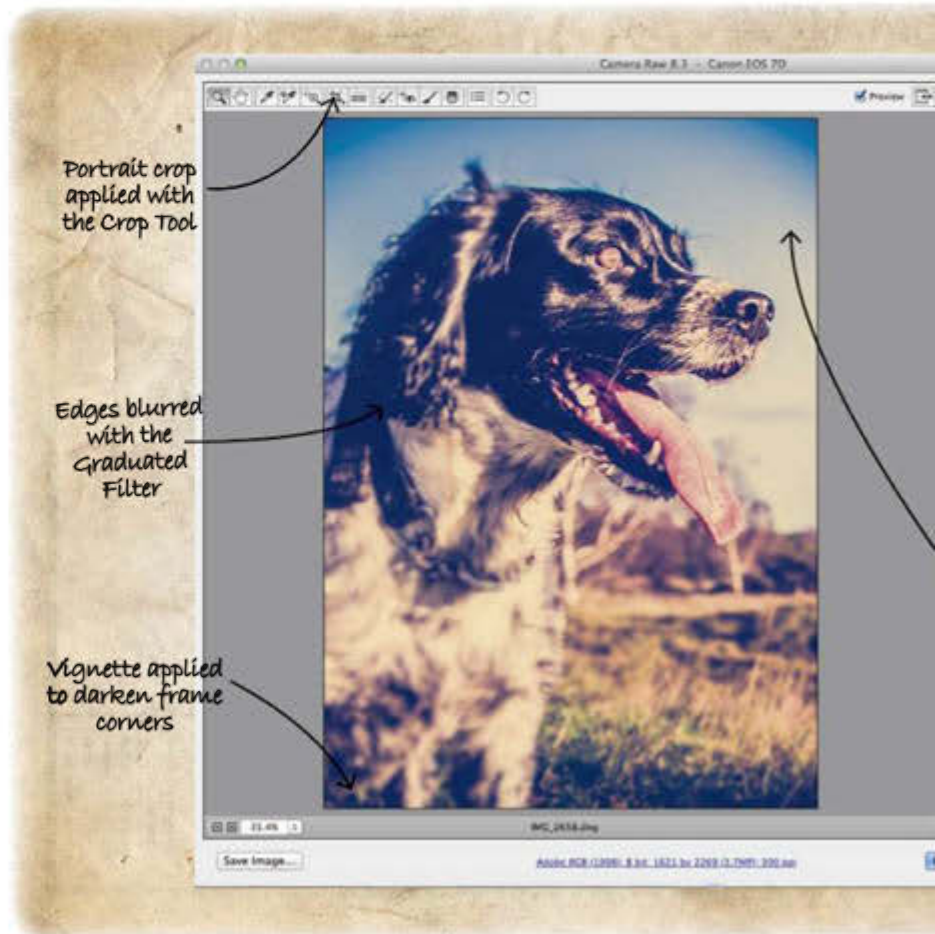
Matty,
the judge



BEN'S ARTY CROSS-PROCESSED LOOK

THE ORIGINAL RAW FILE is a fine shot of a beautiful beast, but I'd like to assign more impact to the character of the pooch. This can be done by applying a tight crop and transforming it into a head & shoulders portrait. To bring out more detail in the face, the Highlights, Shadows, Clarity and Sharpening sliders can all be tweaked to good effect. This restores detail to the brighter and darker parts of the image, and also gives more definition to edges. To create a more arty look, I want to add cross-processing effects using the Tone Curve, as well as a colour tint with the Split Toning controls. To help focus the viewer's eyes towards the spaniel and blur out the distraction of the background, I'll use a number of Graduated Filters around the edges of the frame to soften any detail. To add a final flourish to the image, I'll use a post-crop vignette to darken the edges of the frame and make the subject stand out even more.

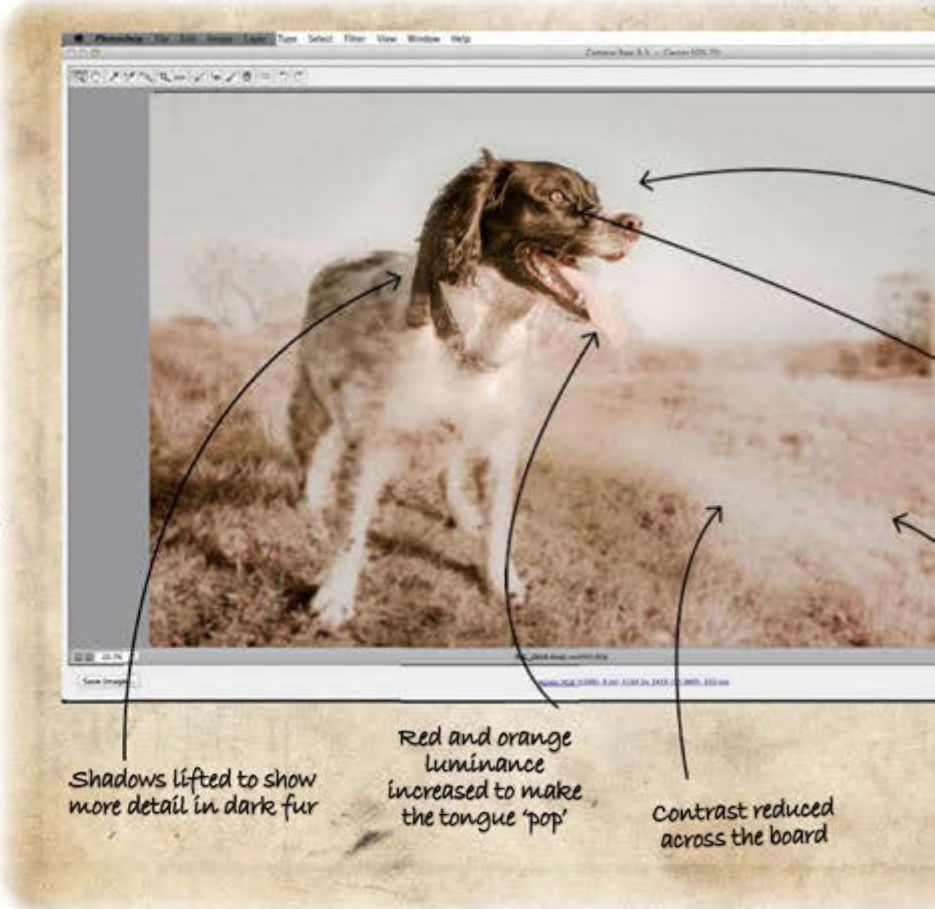
- Crop into a tight portrait, expand Highlight and Shadow detail, boost Contrast, Clarity and Vibrance.
- Apply cross processing effects by manually adjusting the Tone Curve.
- Add Sharpening, Noise Reduction, Split Toning, and Vignette effects.
- Use the Graduated Filter to create a narrow band of focus to blur the edges.
- Watch Ben's video to see the technique in-depth.

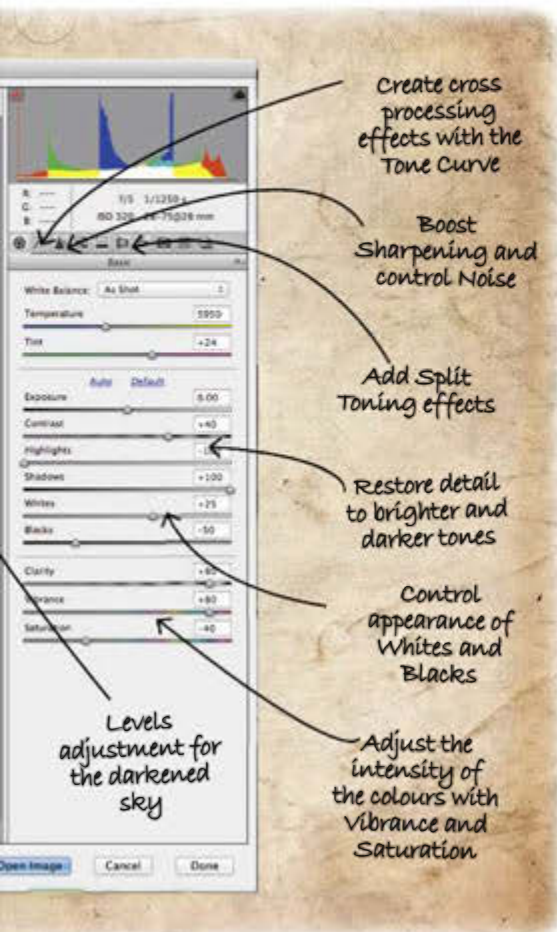


ANDY'S RETRO TONED TECHNIQUE

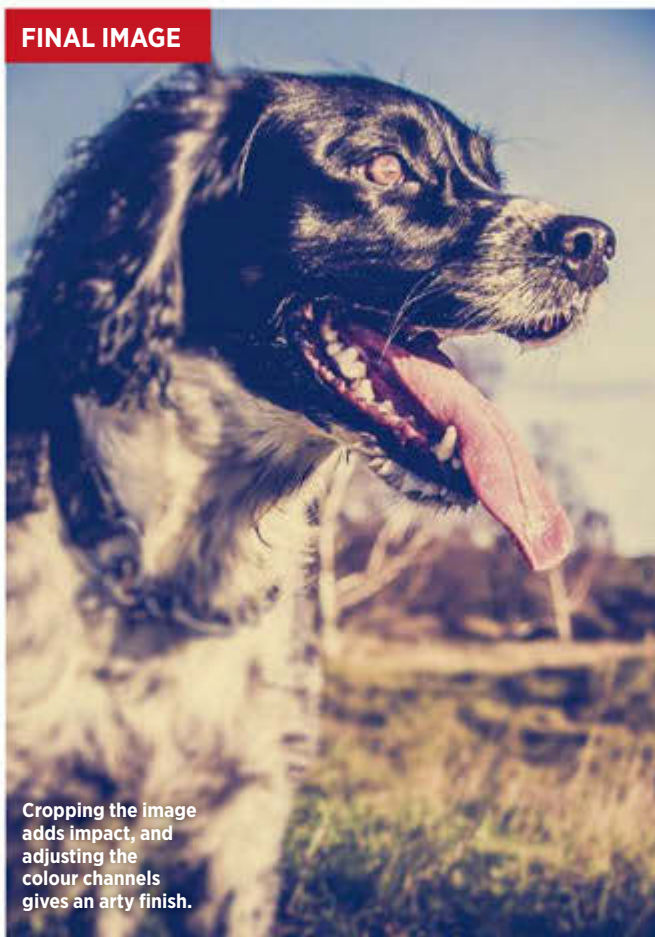
FOR MY MONEY, the original image already contains a certain wistful, nostalgic quality. It strikes me as a reminder of the kind of idyllic sunset walk any dog owner will look back on with a great deal of fondness in the years to come. For that reason I went for a photo filter-style effect that was evocative of nostalgia. Gritty post-processing with lots of clarity and heavy vignettes may be all the rage, but I decided to go the opposite way and make the edges of the image softer and lighter. I only added clarity and sharpness to the eyes and face. To keep away from the blue tones brought about by the original sky, I decided to go warmer and restrict the colour palette to sepia and turquoise. As the dog is gazing into the distance, I kept the space on the right to suggest miles of rolling fields.

- Shift the White Balance toward yellow and decrease the Saturation.
- Use the HSL sliders to reduce the colour palette to shades of sepia and turquoise.
- Use Graduated Filters to soften edges and decrease contrast to take attention away from the background and onto the subject.
- Use an Adjustment Brush to make the eyes come to life.
- Watch Andy's video to see the technique in-depth.





FINAL IMAGE



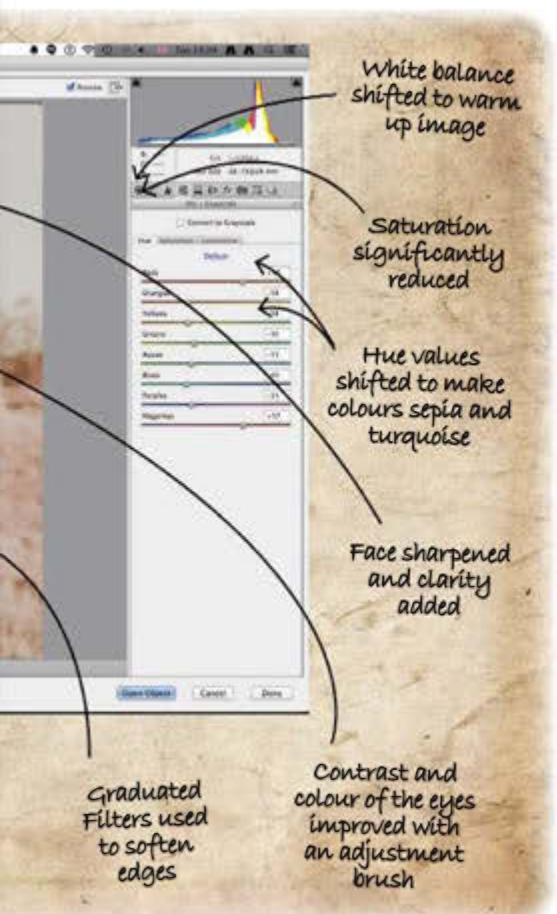
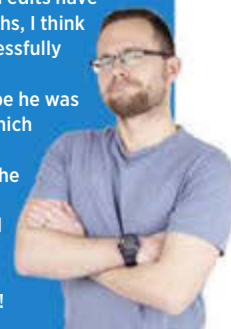
The final verdict

I think it's interesting that Andy and Ben's edits are each representative of their own, distinctive styles.

Ben's gritty, magenta-heavy conversion certainly brings out a lot of detail. The dog's fur looks really shiny, which has given the image extra impact. I can see why his crop emphasises the face and excludes so much of the image's background.

Andy's interpretation makes more of the sunset vibe, giving a warmer, sunnier look. The image also feels retro thanks to its restricted colour palette.

While both edits have their strengths, I think Andy's successfully captures the nostalgic vibe he was going for, which adds to the emotion of the scene, so his is the one I'd choose for my mantelpiece!



FINAL IMAGE



THE WINNER

YOUR PICTURES

Want your shots to benefit from our supportive expert advice? Send your best pics in and see what we can do:
dpimages@bauermedia.co.uk

Your experts



Digital Photo's technical editor, Dan, and assistant editor, Matty, are on hand to help with insightful shooting and image-editing tips. To have your work shown and assessed in *Your Pictures*, send a selection of no more than five images to the address on the left, and remember to put *Your Pictures* in the subject box of your email.

The calm waters have reflected the hills like a mirror, adding symmetry to the composition

BUTTERMERE

by Colin Thompson

Camera Canon EOS 7D & 16-35mm lens Exposure 1/6sec @ f/16, ISO 100 Software Photoshop CC



Buttermere is one of my favourite locations in the Lake District. During this visit there was no wind so the lake was perfectly calm and still. It almost looked like a mirror! The sun was setting behind High Stile and there was still snow on my focal point of Fleetwith Pike in the distance.

DAN SAYS “Colin has picked a wonderful view that evokes tranquillity. It’s a great shot that takes in a broad view of a classic Lakeland scene. Taken at the shores of Buttermere, the image boasts excellent composition, even though it breaks with tradition. Rather than

follow the well-known Rule of Thirds, Colin has used the unique geology of this location to his advantage – placing the tall peak in the distance right in the centre of the frame. Both sides of the image are filled with more beautiful hills that lead diagonally down toward the main focal point. These natural lead-in lines work well, but there’s an added bonus – the calm waters have reflected the hills like a mirror adding symmetry to the composition.

“Although Colin’s treatment is spot on, there are a few elements he has had to work around. The branches creeping in at either side of the frame are distracting and feel like they’re intruding on the shot. In the foreground,



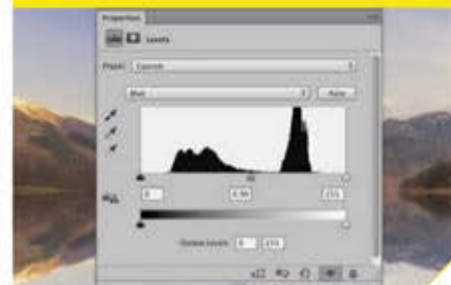
partially submerged fences can work brilliantly as lead-in lines, but the one here is a little scrappy and is only echoing the natural line already supplied by the reflection. In this instance, I think less is more, so I’d look to lose the branches and the fence to declutter the frame. The most important elements of this scene are in the middle of the shot, so drawing out a wide panoramic frame with the **Crop tool** will not only remove the branches, but will also make for a more epic, wide-screen view.

“Removing the fence is trickier, as it partially covers the reflected hill. Some delicate cloning would be effective, but there’s a quicker solution worth trying. Using the **Rectangular Marquee**, draw out a box that covers the upper half of the frame, down to where the water meets the shoreline. Hit **Ctrl+J** to punch this into a new Layer, then hit **Ctrl+T** and pull down the top handle of the bounding box to flip it vertically and create a new, clean ‘reflection’. Because it will be sharp and not naturally blurry like a true reflection, add a few pixels of vertical **Motion Blur** to soften it.

“Lastly, the image has a slightly cold feel – a result of all the blue in the scene. To make it more inviting, I’d add a little warmth (see below). With these tweaks made, this is an image any photographer would be proud of.”

Expert advice Correct colour with Levels

Adjusting the colour balance is easy with **Levels**. Click on the **Adjustment Layer** icon in the **Layers palette** and select **Levels** from the list. A **Histogram** graph will appear with three sliders beneath, but any changes made at this stage will just affect the contrast. To change the colours, click where it says **RGB** and select a colour. Moving the middle slider will now increase or decrease the chosen colour in the scene. To add warmth, select **Red** and move the middle slider a little to the left, then select **Blue** and move it a little to the right.



AFTER

Reformatting the frame has made more of the location’s natural lead-in lines.

► SMOKING GUN by Liam Stokes

Camera Canon EOS 5D MkIII & 24-105mm lens

Exposure 1/125sec @ f/5.6, ISO 100 **Software** Photoshop



The image was created by shooting smoke trails from incense sticks against black card and firing an off-camera flash to the right. In Photoshop, I used the Quick Selection tool to extract the gun from another image, then copied and pasted it on to the candle image. I created the glowing edges by first desaturating the gun then using Photoshop's Glowing Edges filter and adjusting the sliders to create a smokey glow.

MATTY SAYS "Liam's image is a work of real creativity. Rather than simply pointing his camera at a location, he's crafted his picture out of sheer imagination. The image and title, 'Smoking Gun' work together to give a visual twist on a well-used expression and Liam has used a good deal of technique, both in the capture and the post-processing, to build the all of these elements into a final striking image.

"With a conceptual image, it's more difficult to suggest improvements, as this is Liam's vision after all. However, one observation that's fair is that the pale smoke struggles to stand out strongly from the black background. One solution would be to make the smoke and gun more vibrant, so it really pops from the pic. The simplest way to do this is to change the colour of this area.

"By adding a solid colour Layer (**Layer**→**New Fill Layer**→**Solid Colour**), you have the option to pick any colour you like to enhance the shot. I picked a blood red tint for Liam's image to tie in with the gun concept, but there are equally strong options, depending on the message you want to convey. Once you've selected your colour, you'll need to change the Blending Mode to Color to allow the detail from the Layer below to show through. If the effect of the colour is too strong, simply reduce the Opacity of the new, Solid Colour Layer.

"Now the image has a red tint, the candle at the bottom of the frame will also be red-toned and this doesn't work. Adding a Layer Mask and painting out the affected area with a black brush will allow you hide the toning effect, restoring the candle's original colour.

"Lastly, the gun's handle lacks a little detail. While this doesn't stop the viewer identifying the object, a little work with the Dodge tool will highlight the handle area and fix this problem (see panel).

"Overall, I really like what Liam has done. It's an exciting idea that displays artistry and visual wit – well done!"

BEFORE



Expert advice Use the Dodge to enhance detail

The Dodge and Burn tools can be used to lighten or darken parts of an image. Like any Brush, the size of the tool can be adjusted using the square bracket keys. For added control, you can choose whether to Dodge or Burn the **Highlights, Midtones or Shadows** in your target area by changing the **Range** setting in the Tool Options bar. The **Exposure** control alongside governs the strength of the tools, and this needs to be set low – around 4% is plenty for photographic work.



AFTER

With the injection of some vibrant colour, the focal point of the image stands out much more boldly.



AFTER

With the frame extended to give the rider room to move into, and a new, clean background in place, Richard's shot of Guy Martin is a real winner!

▲ SPRING CUP by Richard Howlett

Camera Canon EOS 1Ds & 70-200mm f/4 lens
Exposure 1/400sec @ f/8, ISO 200 Software None



Oliver's Mount in Scarborough is the only road circuit in Britain and I was there to shoot the fast-paced action of the Spring Cup road race. Because it's a road circuit, there's an added sense of danger with the riders speeding by just metres from the stands. I must have taken thousands of photos, trying to capture the close proximity to the crowd. TV personality Guy Martin was racing and I managed to get this panning shot of him on a brightly-coloured Suzuki GSX-R1000.

■ **DAN SAYS** "Richard has done a great job at capturing one of motorsport's most famous characters getting really low on a bend. Composition is always tricky with panning techniques, as with the camera moving, you never know quite where your subject will end up. However, Richard has expertly used the 200mm end of his zoom to fill the frame, and more impressively – he's got the rider reasonably sharp, too.

"The beauty of panning shots is they provide a sense of speed and separate the subject from the background. By moving the camera with the bike, the subject is held sharp in the frame. The camera movement blurs anything that's static, so with a long enough shutter speed, the background becomes a streaky blur. How long a shutter speed you choose depends on the speed of the subject, but Richard's

choice of 1/400sec was enough to capture motion in the spinning wheels, and get some blur in the background.

"Being critical, there are two main issues I have with this shot, and the background is one of them. Though Richard was looking to show the proximity of the spectators, the prominent fence makes the shot quite cluttered and dark, and prevents the bike from taking centre stage. The other thing I'd be tempted to change would be the composition. The bike needs more space in front than behind. This active space gives a subject 'room to move into', and reframing would give a stronger composition.

"Replacing the background involves carefully cutting out the bike and road with the **Polygonal Lasso** tool. Once this is done, click **Refine Edge** and set **Feather** to **1px** to soften the edge slightly, then hit **Ctrl+J** to place the cut-out on a new Layer. All that's needed for a new background is a shot of some grass, and with this added to a Layer beneath the rider, all the background distractions will be gone. To get a panning effect on the grass, go to **Filter→Blur→Motion Blur**, and set a **Distance** of **1200px** and an **Angle** of **3°** to match the incline.

"More space is needed to alter the composition, so use **Image→Resize→Canvas Size** to extend the frame to the left by a few cm. You'll have enough grass, but the track will need to be extended to reach the frame edge. This is easy with the **Clone Stamp** tool. Hold **Alt** and click on the track to sample it, then release **Alt** and paint in some new road to meet the frame edge. This will really lift the rider from the background, and give a high octane shot to savour."

BEFORE



Expert advice Use High Pass to sharpen details

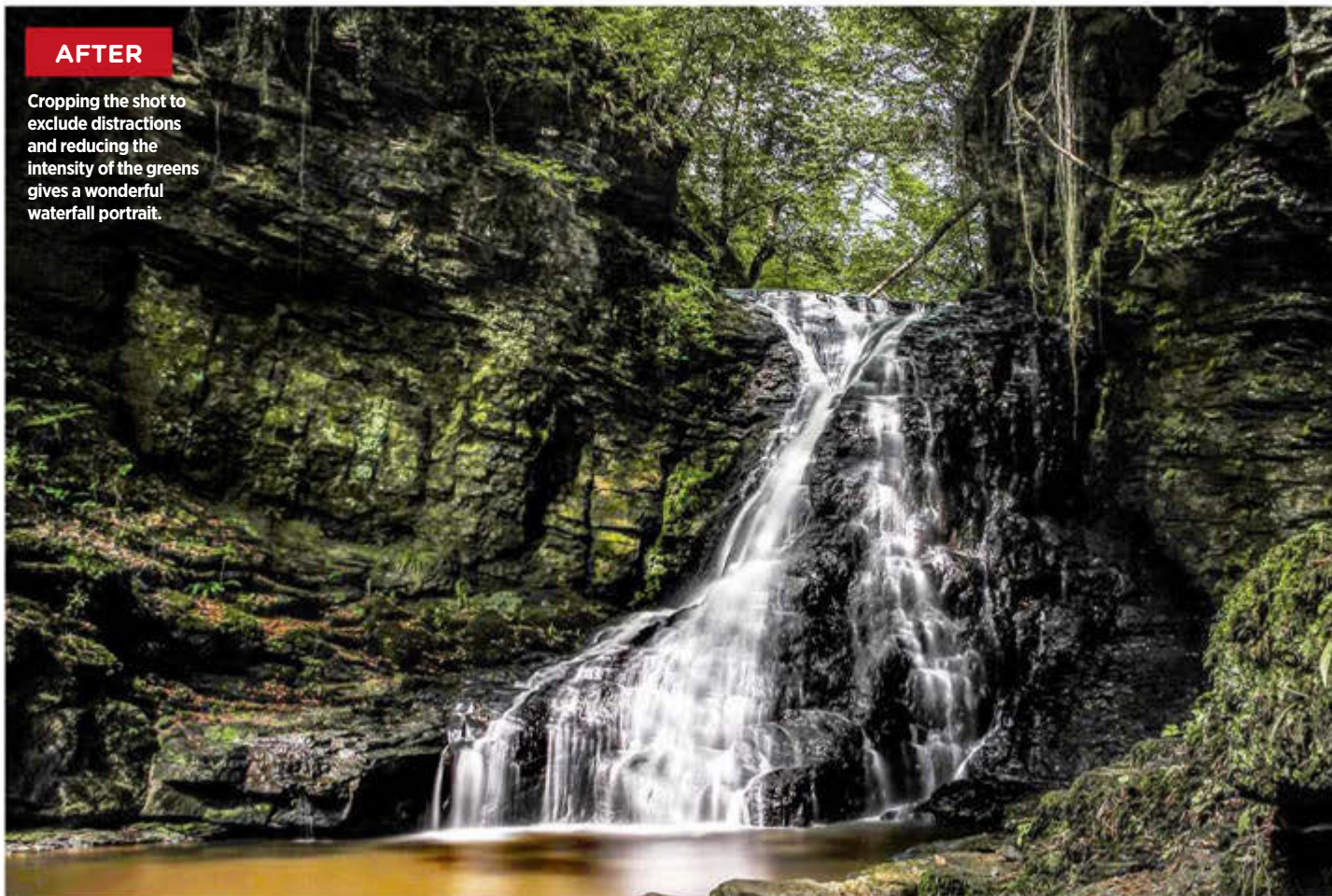
Most images benefit from sharpening, but panning shots always require it. It only needs to be applied to the subject though, as your background is already blurred. With a flattened image, make a Selection around the part you want to Sharpen with the Lasso tool then feather it to soften the edge. Hit **Ctrl+J**



to place the area on a new Layer and then go to **Filter→Other→High Pass**. Use a low value of **4px** and then hit **OK**. In the Layers palette, change the Blending Mode to **Overlay**.

AFTER

Cropping the shot to exclude distractions and reducing the intensity of the greens gives a wonderful waterfall portrait.



ENCHANTING CASCADE

by Bob Cooke

Camera Canon EOS 7D & 15-85mm lens

Exposure 154secs @ f/9, ISO 100 Software Photoshop



Although I take photos of any subject matter, I do lean towards landscapes as my wife and I travel a lot in our motorhome. We visited Hareshaw Linn waterfall and weren't disappointed. I took the long exposure shot using a 10-stop ND filter to get the dreamy water effect.

MATTY SAYS "By using a 10-stop density filter over his lens, Bob has captured a very long exposure of this attractive scene in broad daylight. The extra time the shutter was open has allowed movement to be recorded and has transformed the water into a milky blur. Because of the speed of fast-flowing water, you only need a shutter speed around 1-5secs to get a similar effect, but Bob pushed the boat out with a huge exposure time of 154 seconds!"

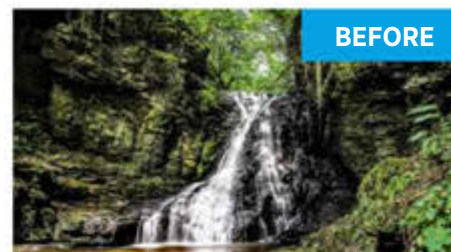
"Bob has done a nice job of revealing the texture on the rock wall. This adds extra interest to the scene, taking it beyond a mere portrait of a waterfall. Although large waterfalls are noisy, powerful beasts, Bob's image softens all the aggression and gives the

viewer a very gentle, tranquil experience. I like this image a lot, but there are two things I'd consider changing to make it even stronger.

"The first is the crop. Bob has opted for extra width with an almost panoramic format. This is a great idea as it can make landscapes look even more majestic, but I'd be tempted to lose some of the distractions around the frame edges. The leaves on the right hand side aren't really acting as foreground interest, as focusing on them takes your eye out of the frame, rather than into it. These need to be either in the shot and used, or out the shot and discarded. Their position loitering right on the edge leaves them in a compositional no man's land, so I'd be ruthless and get rid of them. Before you press the shutter, always look around the frame edges. If you have detail present, ask yourself what job it's doing to improve the picture. If it's important, you'll recompose to include it, and if it's not, you'll reframe to get rid of it.

"The second change I'd make is to the colour of the foliage. The greens are unnaturally loud and vibrant, stealing attention from the main subject, so I'd tone these down. This is easy to achieve using a **Hue/Saturation Adjustment Layer**. In the palette, click on the **Master** box and select the colour you want to adjust. Once you've done this, you can alter its hue, intensity and brightness using the sliders."

BEFORE



Expert advice Crop to reformat your frame

Photoshop's Crop tool (found in the Toolbox) offers you a second chance to compose your shot. By dragging the marquee across the frame, distractions around the edges can be removed. Also, by holding the cursor outside the bounding box, you can drag the mouse to rotate the crop, giving a swift and easy way to level your horizon if required.





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Joe Cornish – Smooth Cotton 300

I aim to crystallise the endlessly varied light, colours and texture of nature in my landscape photographs. At the end of a chain of photographic processes, the print is the culmination and fulfilment of that effort, and the paper is critical to the success of the print. Fotospeed's Smooth Cotton 300 is my paper of choice.



Trevor & Faye Yerbury – Natural Soft Textured Bright White 315

As traditional darkroom printers it has taken us many years to discover the right paper for our digital images that will capture and hold all of the shadow and highlight detail we demand. Natural Soft Textured Bright White is our preferred paper.



John Swannell – Platinum Baryta 300

As a photographer I aim to capture the spirit of my subject. While technology has changed over the years the one thing I feel remains the same is the importance of the printed image. Fotospeed's Platinum Baryta bridges the gap between the traditional darkroom papers and today's digital media. I find that whilst it is known for reproducing superb B&W images it should never be underestimated as a paper for colour work.



Charlie Waite – Platinum Etching 285

Landscape photography is much about discovery and photographers can only fully relish the rewards of their efforts when seen in the form of a print. The paper used for that print has to be as carefully considered as the image made. Discovering Fotospeed's Platinum Etching 285 has been a revelation to me and has proved a vital tool in my ongoing quest to match pre-visualisation with end result.

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JON ADAMS For shooting and Photoshop queries, Jon is on hand to help solve any problems you have.



BEN DAVIS As a former press photographer, what Ben doesn't know about camera techniques isn't worth knowing!



DAN MOLD With a background in photographic retail, Tech Ed Dan can advise on all aspects of camera kit.



ANDY HEATHER Andy worked as a commercial photographer in Japan, and is overflowing with advice.

BUYING ADVICE

What computer spec should I go for?

Q

My computer is getting a bit long in the tooth and although Elements 9 ran on it just fine,

I've upgraded to Elements 13 and it seems to be struggling with it. It has an Intel Celeron processor running at 2GHz, 4GB RAM and a Windows 7 64-bit operating system. I'm considering replacing my computer and wonder what specification I need for Elements 13 to operate at a reasonable speed.

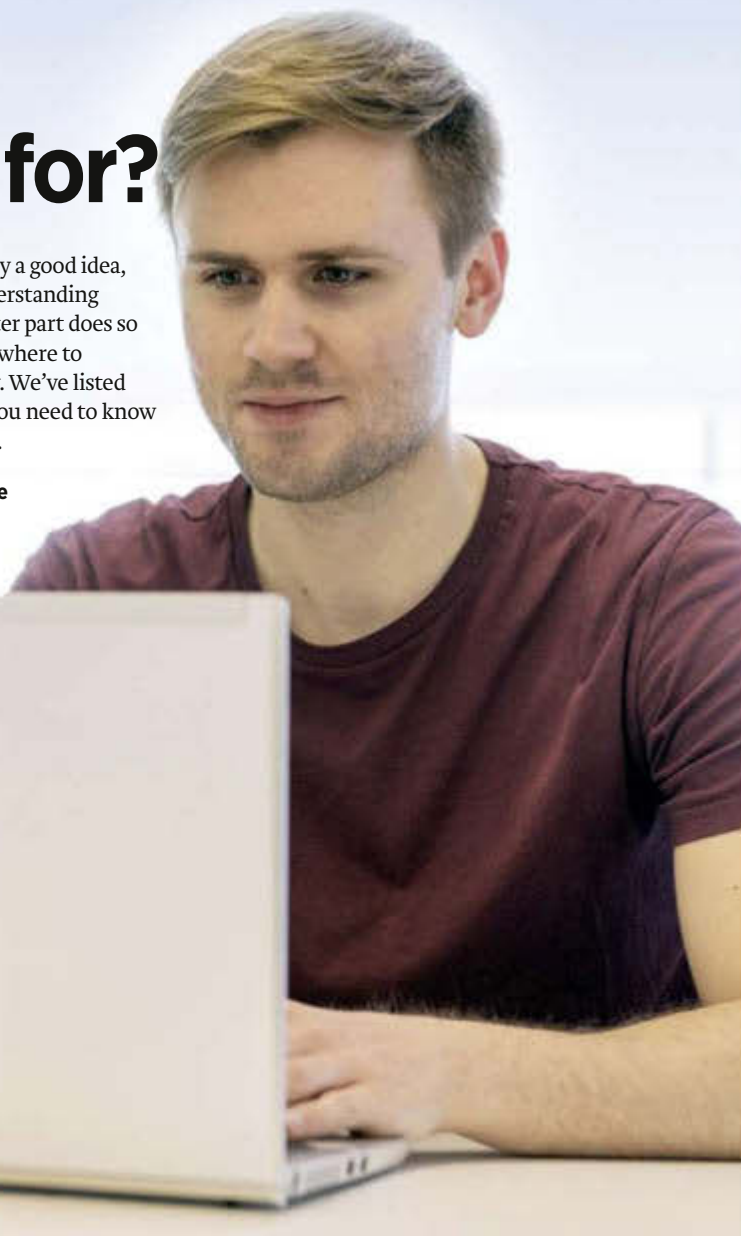
Richard Verrill

upgrade is certainly a good idea, but it's worth understanding what each computer part does so you know exactly where to spend your money. We've listed the components you need to know about on the right.

Looking to upgrade your computer? Make sure you get the right spec.

DAN SAYS Computing power has improved exponentially over the years to accommodate the latest programs. Intel's Celeron processors were discontinued several years ago, and even with a new entry level computer, you'd see an improvement in processing speed. In terms of spec, for PC users the minimum for Elements is Windows 7 and a 2GHz processor. Mac users need OS X and a Multi-core 64-bit Intel processor. In both cases, you need at least 2GB RAM and 4GB of hard drive space, plus a display resolution of at least 1024x768 (and an internet connection to activate the software).

This is the bare minimum you need for Elements 13 to load up and work, and you can see that your existing PC only just crosses the threshold. Open other programs at the same time or run more intensive processing tasks, and it'll slow to a crawl. An





Optical disc drive

A bulky laptop can be a burden so some manufacturers have made them more portable by removing the DVD drive. If you go for a machine such as an Ultrabook or Macbook Air you'll need to factor in the cost of an external DVD drive. These start at around £25 and plug into a USB port, but without one you can't play, read or burn discs. And that means you wouldn't be able to watch our video lessons, which would be crazy!



Graphics card

Photoshop is a graphically intense program so it's worth understanding the difference between built-in graphics and a dedicated graphics card. On-board graphics are the more affordable option and are fine for editing the occasional pic. However, if you can get a machine with a dedicated graphics card, you'll have an extra amount of RAM dedicated to graphic-heavy tasks such as batch processing or editing PSD files with multiple Layers. It's worth splashing out for a dedicated card if you're buying a computer with photography in mind or want to speed up other programs reliant on graphics such as games.

Processor

This is the brain of the computer and as the name suggests it does all of the processing work. When it comes to Intel processors it would be a good idea to go for an i3 chip to see a real difference in performance over your current Celeron. If you're using Photoshop on a daily basis and your budget can stretch to an i5 or the elite i7 processor you'll see a greater overall speed boost. AMD is the other main manufacturer of processors, if you're looking at a PC with an AMD spec you'll want to go for A6 to see a good improvement, or the A8 or A10 if you're editing all day long.



Display

Screen surfaces vary between a matte and gloss finish. These reflect light and glare differently, and what type you like is down to personal preference, so it's worth going into a shop and seeing which you prefer. Laptop monitors come in different sizes, the most common being 13.3in, 15.6in and 17.3in. This affects the whole size of the laptop so you'll need to weigh up whether you want a larger screen at the cost of a bigger computer or a smaller one that's geared more towards portability. It's also worth noting that some displays are touchscreen and allow you to use them like a smart device. Some of these detach completely from the laptop to transform into a tablet.

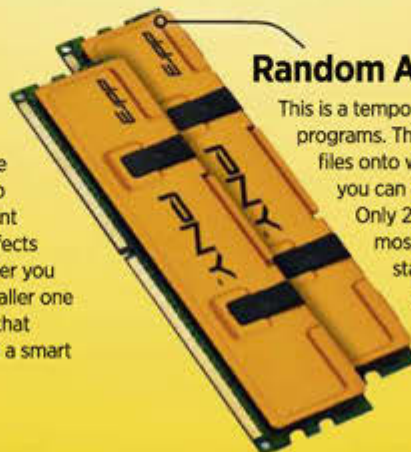
Hard disk drive

This is a permanent type of computer memory, and is used to store all of your files. It's a bit like a filing cabinet, and the cabinet's size is governed by how many Gigabytes it holds. The larger it is, the more data it can store. 500GB is the standard for an entry-level laptop – that's roughly 71,500 JPEGs at 7MB each or 25,000 RAW files at 20MB each. External hard drives are available too – these are portable solutions used to store and back up important files.



Random Access Memory (RAM)

This is a temporary type of memory your computer uses to run programs. Think of it as an office desk that the computer puts its files onto when using them. The larger the desk, the more files you can open, and the faster the performance of the machine. Only 2GB of RAM is required to run Elements 13 but the most basic computers tend to come with at least 4GB as standard nowadays. It's a good idea to get more than this though, if your budget allows. Most computers allow you to upgrade the RAM at a later date so you can improve the machine's performance after you've made the purchase.



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Sizes: 25 to 105mm

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Sizes: 27 to 82mm

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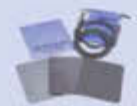
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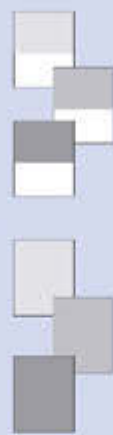
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43mm	37-72	82mm	72-105
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SOFTWARE

Is there a way I can sign my photographs?

Q I'd like to add my signature to some of my shots to give them a bespoke, artistic feel. Is there an easy way to do this digitally in Photoshop, so the signature is embedded in the final picture?

Alan Ruskin

BEN SAYS Adding a signature to your work can give an exclusive limited-edition feel to a fine-art print. Doing it digitally makes your signature part of the picture, and gives you the chance to scale the signature to the exact size you want, and position it really accurately so it doesn't look untidy on the finished item. An easy way to achieve this is to put the signature on a separate Layer in Photoshop. This allows you to produce prints with or without your name depending on whether you switch the Layer on or off, and you can also change its size and position to suit the picture concerned.



SOFTWARE

How do I resize pics for online media?

Q I want to upload my best photos to several different image hosting websites and my own personal blog. Some of my pictures upload no problem, but others are rejected for being too big. My blog site says my images need to be JPEGs measuring 500x750px or smaller in size. I'm sure this is possible with a few clicks in Elements, but how?

Georgina Harrison

ANDY SAYS Open your pic into Elements and head up to **Image→Resize→Image Size**. Now make sure you tick the **Resample Image** box as this lets you set the exact number of pixels. You also need to make sure the **Constrain Proportions** box is ticked too as this ensures the width and height don't become distorted as you resize the shot. At the top you'll see the **Pixel Dimensions**. If your shot is in portrait orientation enter a value of **750px** in the **Height** box – if it's landscape format enter **750px** in the **Width** box instead. Click **OK** to resize the pic, then go to **File→Save As**. Rename the file so you don't overwrite the original hi-res image and save it as a JPEG. When presented with the **Image Quality Options** set the **Quality** to **9** to keep the Quality good and the file size low.

HOW TO SIGN YOUR SHOTS



1 Write your signature
Use a big black marker pen and sign your name in the middle of a sheet of white A4 paper. Now either use a scanner to digitise it, or simply take a picture of it using your camera. You'll need to add around +2 stops of Exposure Compensation to keep the paper white, so hold down the +/- button on the camera and dial this in before shooting.



2 Open and crop the shot
Open your signature pic into Photoshop/Elements and select the **Crop** tool. Draw your crop over the signature and hit **Return**. Now open **Levels** (**Ctrl+L**) and select the white eyedropper from the palette. Click on the white background to make it pure white. Now hit **Ctrl+A** to select it, **Ctrl+C** to copy it and **Ctrl+W** to close it.



3 Digitally sign your pic
Open the image and hit **Ctrl+V** to paste in the signature. Hit **Ctrl+T** to go into **Free Transform** mode, resize it by pulling the corner handles and then drag it into position. Hit **Return** when finished. In the Layers palette, change the Blending Mode of this Layer to **Darken**. Alternatively, for a white signature on a dark background, hit **Ctrl+I** to invert the colours and then change the Blending Mode to **Lighten**.

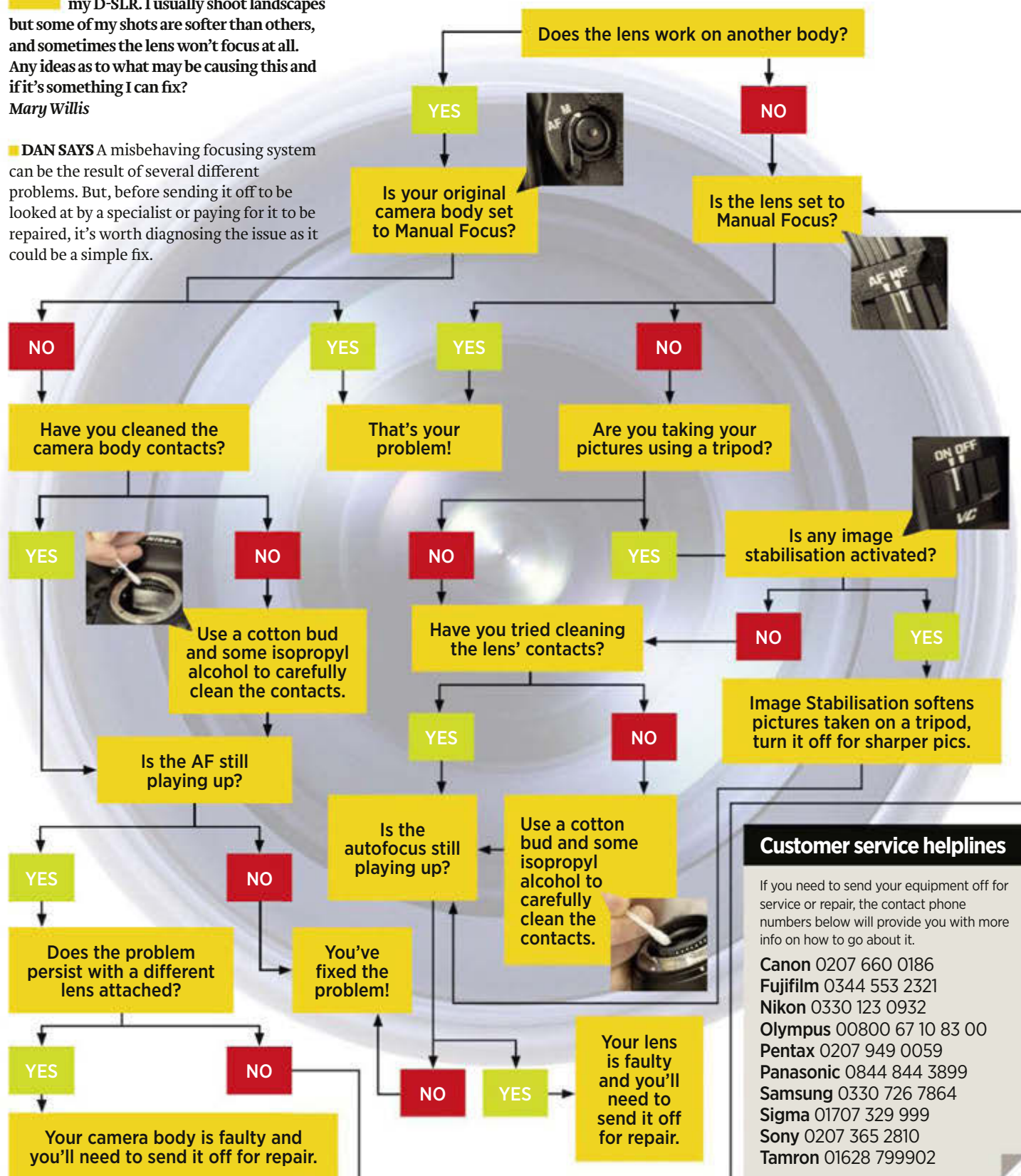
KNOW-HOW

Is my lens focusing correctly?

Q I've experienced some focusing problems with a wide-angle lens on my D-SLR. I usually shoot landscapes but some of my shots are softer than others, and sometimes the lens won't focus at all. Any ideas as to what may be causing this and if it's something I can fix?
Mary Willis

DAN SAYS A misbehaving focusing system can be the result of several different problems. But, before sending it off to be looked at by a specialist or paying for it to be repaired, it's worth diagnosing the issue as it could be a simple fix.

START



Customer service helplines

If you need to send your equipment off for service or repair, the contact phone numbers below will provide you with more info on how to go about it.

Canon 0207 660 0186
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BUYING ADVICE

Should I buy a polariser?

Q I know that many camera filters are no longer necessary because the effects can be recreated in Photoshop, but what does a polariser do, and is it worth buying one?
Emma Langley

BEN SAYS The effects of many filters can be emulated in



Photoshop, but one filter that can't be 'faked' is a polariser. These special filters enrich colours, darken blue skies and suppress reflections in glass and water. Polarisers come in two varieties – Circular and Linear. This refers not to the filter's shape but to the type of polarisation it creates. You should only ever buy Circular polarisers as Linear type filters can interfere with AF and metering systems.

Buy a polariser to fit your largest lens and then get stepping rings to fit smaller filter threads. At around £5 per ring it's much cheaper than buying a polariser for every single lens.

To use one, screw it onto the lens and turn the outer ring of the filter to adjust the amount of the effect. You'll need to watch your

WITHOUT POLARISER



WITH POLARISER



A polariser gives effects you can't recreate in software.

shutter speed though, as you'll lose around 2-3 stops of light at maximum polarisation.

Avoid ultra wide-angle lenses with polarisers, because maximum polarisation occurs at 90° to the sun, and a patchy sky will result from too wide a view.

KNOW-HOW

Can I use my old flashguns?

Q I received a Nikon D-SLR camera as a gift and I own several flashguns from my film days. I've read that older flashguns have a high voltage and could fry the circuitry in my new D-SLR. Is this a myth or do I need to splash out on a new flashgun to go with my camera?
Peter Bott

ANDY SAYS There is a possibility you could fry your new camera's electronics if you were to mount and use a flashgun with a high trigger voltage directly in the hotshoe. Not all, but some older flashguns have a high trigger voltage. These were designed for use with mechanical film cameras, where the voltage wasn't a problem, but the delicate circuitry of modern D-SLRs isn't built to cope with it. Nikon and Canon models are designed to use flashguns with a trigger voltage under 6V, so using an old flash that may be outputting 100V or more is asking for trouble.

While it's annoying that old flashguns may not be safe to use, it could be seen as a blessing in disguise. Working with the flash 'off camera' is perfectly safe and gives much better results with more creative lighting options. You just need to invest in some wireless flash triggers and lighting stands so you can sync up your flash and position it away from the camera.



Why can't I make a Selection?

Q When I try to make a selection in Elements I get the message 'No pixels have been selected', can you help?
Richard Small

JON SAYS The most common reason for this warning is when you have too large an amount already entered in the Feather box in the Tool Options bar. If it's set to 50 pixels, and then you try to draw a Selection that's less than 99px across, Photoshop won't be able to process the command as your Selection is too small for the feather value to be applied. Make sure your Feather box in the Tool Options bar is set to 0 before making a Selection and you won't get this problem. If you want to soften the edge, you can do so using the Feather slider in Refine Edge.

Feather: 0 px

After making a selection always reset the Feather back to a value of 0px.

Help! I can't open my RAW files

Q I recently purchased a Nikon D810 but its RAW files don't open into Photoshop CS5. I gather I will need to purchase the latest version of Photoshop to 'see' them, but do you know of a way I can open them in CS5?
Brian Reeve

BEN SAYS Unfortunately the version of Adobe Camera Raw required to open the D810 files will never be available in CS5, but there's a very simple solution to get it working. You'll need to download Adobe's DNG converter, which is available free from the link below. Once it's installed you can convert all of your D810 NEF files into DNG format. This is a universal RAW format that will open in most RAW converters on the market.

www.adobe.com/uk/downloads/updates.html

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Nick's star trail image was created using the Creative Camera technique in the January 2015 issue.



▲ LEAWOOD PUMPHOUSE by Jean Waring



From: Kirkby in Ashfield, Nottinghamshire

Tell us about your image:

Although I was pleased with the photo I'd taken of this 150-year-old pumphouse in Derbyshire, I thought the 'Pencil

sketches the easy way' treatment from the March 2015 issue would give a more authentic period look to the scene. I knew there would be enough detail within the image to give a good sketched result.

The original shot was taken with my Canon EOS 1100D and 10-20mm lens. Using Layers in Photoshop, I applied the Photocopy and Cutout effects from the Filter Gallery menu to my image. I then added the Sketch Pencil file supplied with the mag and altered the Blending Modes of each Layer to make the sketch effect show through. To finish, I followed the steps in the *Technique of the Month Extra* bonus video and added a textured frame.



Jean followed the step-by-step and bonus video from the March 2015 issue.



▼ POINTS OF LIGHT

by Nick Lucas



From: Ringwood, Hampshire

Tell us about your image: On a cold, clear night, with my Canon EOS 60D wrapped in an old T-shirt to protect it from the damp, I took my inspiration from the 'Shoot space and time' tutorial in the January 2015 issue and created this star trail image in my own garden.

I located the Pole Star above my house as described in the mag, by first finding the Plough and then the Little Bear constellations.

I then set my camera to record 30secs exposures at ISO 400 and shot around 100 frames. I had already fixed my focus in daylight and then returned to my shooting position later, when the stars came out.

It was an exceptionally clear night so the stars were pin sharp. I had to discard my first few frames as the house had been illuminated by passing car headlights, but with plenty of shots in the bag, I then stacked my images in Photoshop using the Photomerge option with just a click of a mouse!



Nick's amazing star trail image consisted of 100 shots, all stacked together in Layers.

Louise has customised a DP project using her own image of a horse's head.



◀ ROMAN RUINS

by Louise Sherratt



From: Northgate, Australia

Tell us about your image: Using the sky, sand and rock start images supplied with the March 2015 issue of the magazine, I decided to recreate the 'Make a haunting desert sculpture' image using a shot I had taken of a horse.

As described in the step-by-step lesson, I used the Quick Selection tool to isolate my horse's head from the original photo I had taken, and made the background transparent. I then applied a rock texture on a new Layer using the Multiply Blending Mode before adding both to the sand and sky images. The sunset and light rays are also artificial, made with Photoshop's Brush tool and Gaussian Blur filter.



▶ BACK TO THE FUTURE

by Michelle Howell



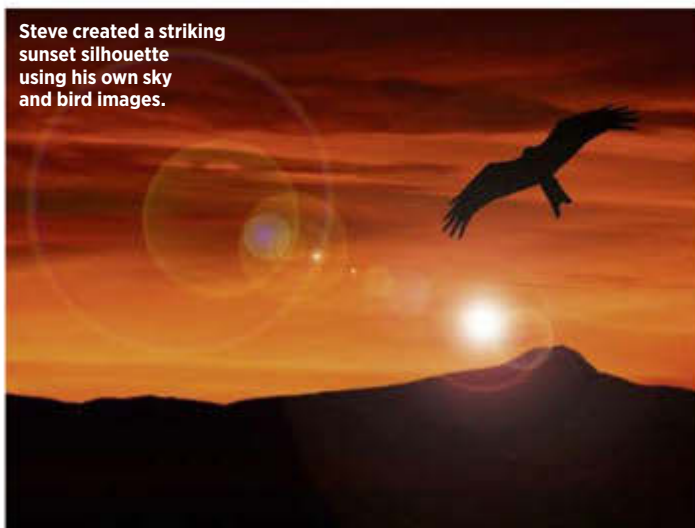
From: Flockton, West Yorkshire

Tell us about your image: Following the instructions in the 'Take a hyperspace car ride' tutorial in the December 2014 issue, I started by mounting my Nikon D5100 with 18-55mm lens on a tripod and positioning it on the back seat of my car. Shooting in Manual mode, I set the shutter speed to 10secs, aperture to f/8 and ISO to 400 as suggested in the step-by-step technique. After a couple of shots, I changed the aperture to f/11 as the results were too bright. The light trails captured through the windscreen make the car appear to be travelling at extreme speed, when in reality, it wasn't at all!



Michelle's 10secs exposure gave a 'hyperspace' look to a car ride at night.

Steve created a striking sunset silhouette using his own sky and bird images.



◀ SUNSET OVER STIRLING

by Steve Smith



From: Birkhill, Dundee

Tell us about your image: I started with an image taken with my Nikon D7100 when we had a great sunset over Bridge of Allan near Stirling. I knew it would need some editing effects to make the fantastic colours stand out. When I saw the 'Build a fantasy sunset silhouette' in the March 2015 issue, it was just what I had been looking for.

I had taken some photos of a red kite last year on a clear, blue cloudless sky and it was easy to select the outline in Photoshop and turn it black before adding it to my sky. As in the tutorial, I added the sun using the Lens Flare filter. Getting that in the right position was the hardest part, but I achieved it in the end through trial and error.



AFTER

By turning a pic of an old locomotive into a painting, Ian has given the image a period feel.



BEFORE



▲ LAST SERVICE

by Ian Hudson



From: Plymouth, Devon

Tell us about your image: If I had been alive when this locomotive was in service, there would have only been black & white photography available to capture it. So this shot, taken with my

Canon EOS 400D and 10-20mm lens during a day at the South Devon Railway preservation line, seemed a fitting subject for the 'Turn pics into paintings - fast!' technique in the January 2015 issue of the magazine. Applying a painted effect creates an image that would only have been achievable by an artist at the time.

The lighting at the time of capture was nice and even, so there were no harsh shadows to



deal with. Following the steps in the tutorial using Photoshop, I added two additional Layers before applying Artistic filters to lay the foundation for the painterly effect - Cutout to the top Layer, Bas Relief to the background Layer and Cutout again to the middle Layer. By blending the Layers together I was able to create the realistic painted effect with texture.

Applying a painted effect creates an image that would only have been achievable by an artist at the time

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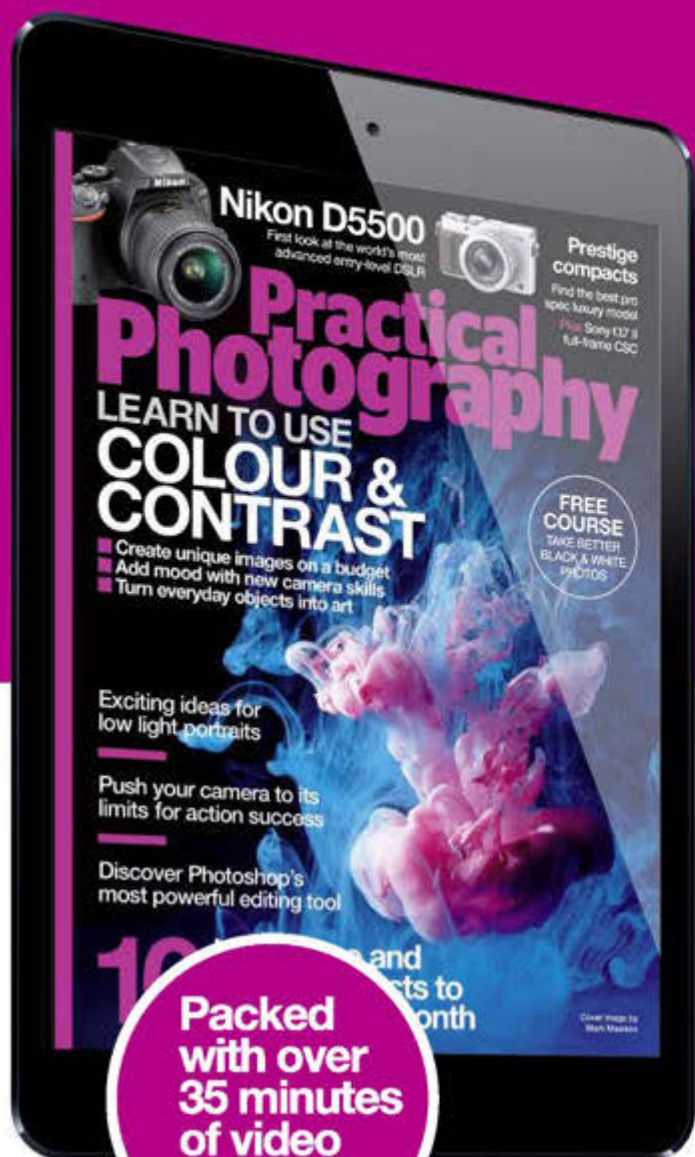
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Digital Photo magazine is published 13 times a year by Bauer Consumer Media Ltd, 1 Lincoln Court, Lincoln Road, Peterborough, PE1 2RF. Registered number 0176085.

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NEXT MONTH

IN THE MAY ISSUE

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AFTER

JON ADAMS

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Nikon D810 YEAR WARRANTY 36.3 megapixels 7.0 fps Full Frame Sensor D810 £2399 D810 Body £2399 NEW D810A Body £2999	Nikon D4s YEAR WARRANTY 16.3 megapixels 11.0 fps Full Frame Sensor D4s £4449 D4s Body £4449	Nikon Df 16.2 megapixels 5.5 fps Full Frame Sensor Df From £1999 Df Body £1999 Df + 50mm £2099

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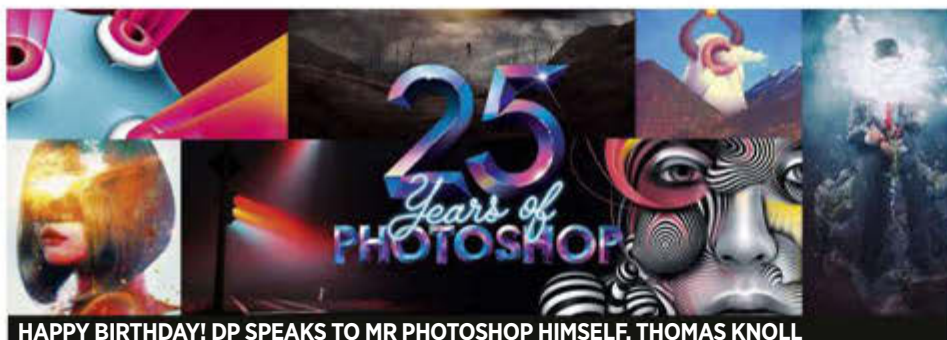
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GEAR FOCUS

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Nikon launches
24Mp **D7200**
D-SLR! *p115*



HAPPY BIRTHDAY! DP SPEAKS TO MR PHOTOSHOP HIMSELF, THOMAS KNOLL

25 years of image-editing *p114*



FIX FOCUS IN SOFTWARE WITH LYTRO

Light field camera on test *p130*



FULL TEST OF 24MP D5500 CAMERA

New Nikon D-SLR rated *p126*



TINY ACTION CAM FROM POLAROID

Magnetic cube camera *p132*



MINI COMPACT SYSTEM CAMERA TEST

Pocketable CSCs from £269 *p116*



Why you can trust our reviews & verdicts

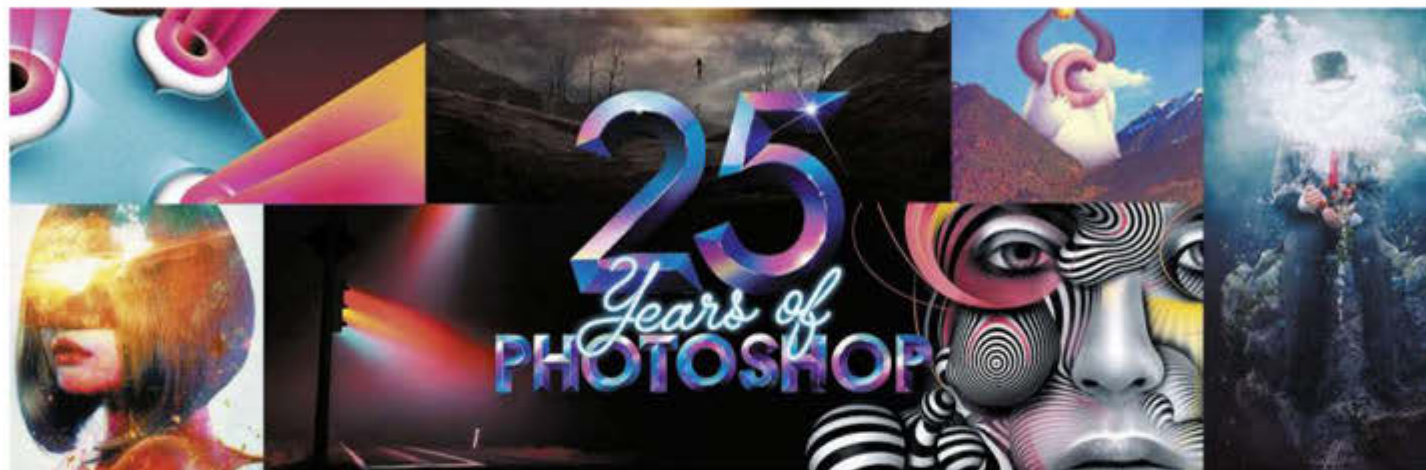
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THOMAS KNOLL INTERVIEW

Happy Birthday, Photoshop!

As the imaging software turns 25, we interview its inventor, Thomas Knoll, to hear his thoughts on a quarter century of Photoshop

INTERVIEW BY MATTY GRAHAM



Q: How did Photoshop idea come about?

The story started in 1987. I was a graduate student working on a computer vision PhD program, creating various image-related software. I hated writing papers in college, so I was procrastinating. I combined some image-processing utilities I'd been experimenting with before giving them to my brother John, who was working for Industrial Light and Magic. He wanted to teach himself computer graphics so he began to add some graphics rendering algorithms to the software to display images on his Macintosh computer.

So, instead of writing my PhD, I developed this hobby image-editing program. After a few months of development, my PhD was no closer to being finished, so my brother suggested we try and sell the program. Adobe bought the software and the procrastination worked – I never did finish my PhD!

Q: What do you work on now?

Since the start, I've been working continuously on Adobe products. One of the advantages of being the original programmer is that I get a fair bit of leeway on what I work on. In 2002, a lot of people were asking for RAW support in Photoshop. I had just purchased a Canon EOS D60 and was interested in using the RAW files, so I volunteered to start the Camera Raw Plug-in project. I still work on that to this day.

Q: What's your favourite feature?

I think the one feature that changed Photoshop was Layers, which came in with Version 3 in 1995. This allowed edits to be

stacked and adjusted later on, so it's my favourite. Second favourite would have to be Camera Raw – as an amateur photographer, I can edit 80% of my images using Camera Raw or Lightroom.

Photoshop is a tool and like any tool, it can be abused. It's down to the user to make the right choices

Q: What do you like to capture when you're out and about with your camera?

I've been an amateur photographer since age 11, when my father gave me an Argus Rangefinder camera and taught me how to make prints in the darkroom. A lot of Photoshop's design stemmed from my experiences as a teenager with the camera. I was frustrated by the lack of control you have in the darkroom, especially over adjusting blacks and whites separately, which is why I invented the Levels feature.

My photography took a hiatus for a number of years until digital cameras came out and my love of photography started again. I spent a lot of time travelling the world, taking photos of the wildlife and landscapes I encountered. My images can be seen at tknoll.com

Q: Has the climax of editing images been reached yet?

No! Every time a significant feature is added to Photoshop, it surprises me. Content Aware Fill

blew my mind and was something I could never have imagined 25 years ago. These advances are simply because computers have got so much faster. I did a calculation recently and the computers you can buy today, compared to the computers available when Photoshop 1.0 first came out differ by a factor of one million on the amount of maths they can do per second!

Q: How do you feel about the criticism Photoshop receives, particularly surrounding the retouching of models?

I'm not terribly happy about a lot of stuff going on, especially the body image issues it creates for a lot of women. It's a controversial issue, but Photoshop is a tool and like any tool, it can be abused. It's down to the user to make the right ethical choices.

Q: How do you feel about the word 'Photoshop' passing into common, everyday language?

The first prototypes did little more than display images, so the first name was 'Display'. As we added more features, we tried Photo Lab for a couple of months. All this time we were trying to find a publisher that would spend money on market research to find the ideal name, so we decided to come up with a codename.

A suggestion of PhotoShop came about and we just stuck with it – the only difference is that the 's' is now lowercase. When Photoshop is mentioned as a verb in TV and movies, it gives me a thrill every time I hear it. It's neat to have a verb you created!

D-SLR CAMERAS

NIKON'S NEW D7200 BREAKS COVER

NIKON HAS ADDED ANOTHER APS-C D-SLR to its lineup – the 24.2Mp D7200. Building on the success of its predecessor, the D7100, the DX-format camera sees a raft of significant improvements for still images and video.

Built around the EXPEED 4 processor, which is also used in the flagship D4s, Nikon claims the D7200 processes images 30% faster than the D7100. In fact, the EXPEED 4 chip enables the D7200 to shoot up to 18 RAW files or 100+ JPEG images in one burst – ideal when shooting action sequences.

The D7200 features a 51-point AF system – which Nikon says is sensitive enough to perform well in low



The 24.2Mp D7200 offers an array of features for both stills and video shooters.

light – and the camera can shoot at 6 frames per second (7fps in a 1.3x crop mode). With a magnesium alloy body, the D7200 also sees connectivity features added to its spec list. Boasting both Wi-Fi and Near Field Communication (NFC), images can quickly be uploaded to the internet using a smartphone or tablet, even while out in the field.

Along with the many stills features, the D7200 also offers new modes for video use. Footage can be taken at 25/30/50/60p, with files being recorded to one or both of the dual SD card slots. An Auto ISO mode can be used in Manual mode in order to transition smoothly from light to dark environments and there are enhanced audio options, too. New features enable videographers to control how the sound range is recorded and the D7200 works with Nikon's latest microphone. Launched at the same time as the D7200, the ME-W1 (£239.99) is a wireless mic that's weather-resistant. The D7200 is available now, priced at £939.99 body only or bundled with the Nikkor 18-105mm f/3.5-5.6 VR lens for £1119.99.

► www.nikon.co.uk



BRIDGE CAMERAS

Nikon P900 offers 2000mm for just £500

Nikon's Coolpix bridge camera range has expanded with the launch of the P900 – a 16Mp camera with a huge 83x zoom. This allows photographers to zoom from a wide-angle view of 24mm to a super telephoto length of 2000mm. What's more, the built-in f/2-6.5 lens features 5-stop image stabilisation technology.

Although the focal length is this camera's main thrust, the rest of the spec is impressive too. The P900 boasts a rapid burst rate of 7fps and images can be composed on the 921k-dot, 3-inch vari-angle screen or via the Electronic Viewfinder (EVF). Priced at £499, the P900 is on sale now.

► www.nikon.co.uk

Along with its huge zoom, the P900 sports Wi-Fi, NFC and GPS features.



PORTABLE FLASH



Elinchrom announce ELB 400 system

Building on the success of its Quadra portable flash range, Elinchrom has unveiled the latest system – the ELB 400. Boasting new Strobo, Sequence and Delayed flash modes, the latest Quadra also offers recycling times that are 20% faster than previous models. An improved battery capacity means 350 full power flashes are now achievable from a single charge and the kit works with Elinchrom's Skyport radio trigger system. The ELB 400 sees increased power compared to previous models, with a maximum power of 424W/s. Also featured is a continuous lighting option via a 20W LED lamp. Prices for the kits start at £1409.

► www.elinchrom.com

NEWSBYTES

Go wireless with Nissin

■ Nissin has unveiled the Di700A flashgun and the Commander Air 1 – a wireless trigger system that's capable of controlling up to 21 Nissin flash units.

The Di700A offers a Guide Number of 48 (ISO 100), runs off 4xAA batteries and comes in Canon and Nikon versions, with a Sony-compatible version planned for May 2015. The Commander Air 1 features 8 steps of manual power control and runs on 3xAAA batteries, which can fire the flashguns 3000 times before they'll need to be changed. ► www.kenro.co.uk



Lowepro's new tactics revealed

■ Bag manufacturer Lowepro has launched a new range of professional quality camera backpacks. Aimed at photojournalists and documentary photographers, the ProTactic series comprises of the ProTactic 350 AW (£170) and the larger 450 AW (£210). Both bags offer four separate entry points at the top, back and sides of the pack, room for two D-SLR cameras and a padded compartment for your laptop.

► www.lowepro.co.uk



ND filters for every budget

■ Accessories manufacturer Marumi has launched a new range of screw-in Neutral Density (ND) filters. Used to extend exposure times for creative effect, the Digital High Grade (DHG) range includes filters with a fixed density of 8, 16, 32 or 64 and are available in filter thread sizes from 37-82mm. Additionally, Marumi has launched a variable ND filter with a range of ND2.5-ND500, available in 58mm and 77mm filter threads. Prices for the NDs start at £40.44, with the variable filter costing £125.40. ► www.kenro.co.uk



CSCS UNDER £440

HITTING THE SWEET SPOT

A tiny camera with interchangeable lenses and creative controls is highly appealing. We test four mini CSCs to see which is the pick of the mix

TEST BY DAN MOLD

COMPACT SYSTEM CAMERAS or CSCs, are relatively new to photography, introduced by Panasonic and Olympus back in 2008. As the name implies – CSCs are all about size and portability. They're packed with features commonly seen in D-SLRs like full MASP creative modes, fast burst rates and interchangeable lenses. The latter is the most important as it means you can attach one of many lenses available to suit specific shooting scenarios.

But although all CSCs are undoubtedly system cameras, many are the same size as

entry level D-SLRs, so the 'compact' element is overlooked. Not so with this month's selection, as we look at four CSCs that have really taken 'compact' to the next level.

These minute marvels offer king-sized features in a body the size of a pack of playing cards – and that really is a mouth-watering prospect. With their diminutive designs, it would be easy to think the imaging sensors are equally small, but they're larger than most chips found in compacts. This means low-light performance could be an area these

cameras excel at. So how do you know if a CSC is for you? Well, if you like the idea of having D-SLR capability but don't want to shoulder its bulk then a CSC is certainly worth considering. The four we've picked are similar in size to a large compact, so they'll feel very familiar if you're upgrading from this route. If you already own a D-SLR, then a CSC is a fantastic back-up camera you can take anywhere. It's also easy to keep a low profile with a CSC, so if you like shooting candids on the streets, or take shots where D-SLRs look too 'pro', they may be a tempting treat.

WHAT TO LOOK FOR

WIRELESS OPTIONS

The four CSCs on test have Wi-Fi for remote shooting or transferring your images through an App. Some cameras have Near Field Communication (NFC) allowing you to sync it to a smart device by bringing it into close contact.

FAST BURST RATE

Most CSCs come with a much faster burst rate over a similarly-priced D-SLR. This is because they don't have a mirror nor an optical viewfinder. With no mirror to flip up and down when shooting, the frame rate can be faster, and the cameras on test shoot RAW bursts up to a blistering 60fps!

SENSOR

Don't be fooled by a CSC's tiny proportions, the sensors inside can be considerably larger than those found in compacts. Sony's recently announced A7 Mk II has an astonishing full-frame chip. The largest in this test is the Panasonic GM1 with its Micro Four Thirds sensor.

LENS MOUNT

This is the most important part of a CSC as it allows you to attach different lenses. If you want to blur the background you can mount a lens with a large aperture, and if you want to fit the whole scene in you can attach a wide-angle. It's worth looking at a manufacturer's lens range before parting with any cash as some are more expansive than others.

How we did the test

All four cameras were propelled through our robust testing procedures, using test charts in the studio to assess image quality throughout the aperture and focal ranges, and outside in the field. In this test, portability and handling were important too, so we rated each model on these criteria and scrutinised the results before deciding which offered the best overall value.



Samsung
NX Mini
£269



Pentax Q-S1
£369



Panasonic GM1
£439



Nikon 1 J4
£359



NIKON 1 J4 £359

THE TECHNOLOGY INSIDE the 1 J4 is as eye-catching as its bold colour options. The CX-sized CMOS is the second smallest sensor on test, but packs in an 18.4Mp resolution for JPEGs and RAWs with an output size of 5232x3488px.

The 10-30mm f/3.5-5.6 PD Zoom lens attaches via the Nikon 1 lens mount and has a film equivalent of 27-81mm after factoring in the 2.7x sensor crop. The lens features an integrated Vibration Reduction system to tame camera shake and has a built-in lens cap which opens on startup. PD stands for Power Drive, meaning the zoom is electronic rather than mechanical, so videos benefit from a smooth zooming motion.

The body has been kept to a small size with dimensions of 99.5x60x28.5mm, but with the battery inserted, SD card loaded and kit lens attached, it was the heaviest on test at 308g. It's comfortable to hold though, and a studded zoom ring provides added security.

The top of the 1 J4 is minimalist and practically flush with shallow buttons and a Mode dial which has been sunken into the body. We had just one objection here – the Mode dial clearly has space for a few more modes and dedicated Manual, Program, Aperture & Shutter priority modes would have made its operation as slick as its looks.

Turn your attention to the back and you'll find the 3in fixed screen. The LCD boasts the greatest resolution on test at 1037k-dot. It's a

touchscreen too, so you can tap to focus or swipe through the images you've taken.

The EXPEED 4A processor paves the way for an impressive top burst rate of 20fps with autofocus or 60fps without. That's blisteringly fast and the quickest on test.

An ISO range of 160-12800 is available and there's a shutter range of 30secs to 1/16,000sec with the option of a Bulb mode.

The 1 J4 is the only camera here to feature an Advanced Hybrid AF system with Phase detection. This was just as quick as its burst rate and noticeably smoother than all other CSCs, which hunted a little.

Slower though, were its write times. 1.1secs was taken to clear a single Fine JPEG and 1.7secs for one RAW. Twenty JPEGs or



RAWs could be taken at the maximum 60fps burst rate, and these took 5.4secs and 22.3secs to write to card respectively.

Wi-Fi is incorporated into the build, but we found its performance to be fairly unimpressive as it tended to lose its signal when only a few metres away.

The blisteringly fast top burst rate of 20fps with autofocus or 60fps without, is enough to blow the competition out of the water

DIGITAL PHOTO THE RATINGS

Pros: Lightning quick AF and burst modes, 3in 1037k-dot touch display

Cons: No MASP on mode dial, slow write times, heaviest on test

Features and build	★★★★★
Performance	★★★★★
Image Quality	★★★★★
Value for money	★★★★★
Overall verdict	★★★★★

Quickspec

Street price: £359 (w/10-30mm f/3.5-5.6 PD Zoom)

Sensor size: 1in CX CMOS (5232x3488px)

Resolution: 18.4Mp

AF points: 105 Phase detection points

Burst rate: 60fps

ISO range: 160-12800

Shutter range: 30secs-1/16000sec & bulb

Monitor: 3in, 1037k-dot touch LCD

Visit: www.nikon.co.uk



Nikon's 1 J4 may be small, but it's capable of shooting 20 RAW files at a rapid burst rate of 60fps.

PANASONIC GM1 £439

SITTING AT THE TOP OF OUR price bracket at £439 is Panasonic's GM1. Helping to justify its cost is the 16Mp Live MOS Micro Four Thirds sensor which is the largest type on test. To put it into context, its chip is roughly five times larger than the one found in Pentax's Q-S1, and twice the size of the sensor in the Nikon 1 J4 and the Samsung NX Mini. Its resolution allowed for RAWs and JPEGs to be recorded at a maximum of 4592x3448px.

The GM1's body doesn't reflect this larger sensor though, as it beats all others for width and height with its sleek dimensions of 98.5x54.9x30.4mm. It's lighter than the Nikon and Pentax CSCs too, weighing 277g with the battery, lens and SD card in place.

The Micro Four Thirds sensor has a crop factor of 2x so the attached 12-32mm f/3.5-5.6 G kit lens has a film-equivalent of 24-64mm. Stabilisation comes in the shape of lens-based Mega O.I.S for sharper shots.

The Venus processing engine gives a maximum shutter speed of 1/16000sec and a fast burst rate of 40fps. There's an ISO range of 200-25,600 which can be expanded to a lower value of 125. Using the free Panasonic Image App the wireless connection proved to be strong and rarely dropped out during our tests.

The top of the GM1 is neat and logical. There's just enough space for a pop-up flash, power switch, shutter, Mode dial and focus

selector. The Mode dial sports MASP options and the focus selector has a customisable function button built in.

Although there's no command dial, you'll find a scrollable wheel on the rear which sits around the D-Pad. This makes it easy to set up your exposure. To the left of the D-Pad is the 3in 1036k-dot screen which is just beaten for resolution by Nikon's 1 J4. Like the 1 J4, it's fixed in place but has touchscreen functionality so you can use touch gestures like a smartphone.

The GM1 is restricted to Contrast detect AF so it took a moment to lock on to subjects. However, features like its Pinpoint AF mode and dedicated focusing switch on the top made precise focus easy to achieve.



The pace was quicker when it came to write times with both single RAW and JPEG files clearing in 0.2secs. A burst of 20 JPEGs could be rattled off before it slowed and these wrote to the card in 1sec. On the RAW side, seven shots filled the buffer, but these were written to the card in 2.5secs.

The Micro Four Thirds sensor inside the Panasonic GM1 is the biggest found in our four CSCs, yet the camera has one of the most portable bodies on test

DIGITAL PHOTO THE RATINGS

Pros: Largest sensor on test, very compact body, 40fps burst mode, dedicated focus switch, fast write times
Cons: AF hunted a little, high price

Features and build	★★★★★
Performance	★★★★★
Image Quality	★★★★★
Value for money	★★★★☆
Overall verdict	★★★★★

Quickspec

Street price: £439 (w/12-32mm f/3.5-5.6 Mega OIS lens)
Sensor size: Micro Four Thirds (4592x3448px)
Resolution: 16Mp
AF points: N/A
Burst rate: 40fps
ISO range: 200-25600
Shutter range: 60-1/16000sec & bulb
Monitor: 3in, 1036k-dot LCD
Visit: www.panasonic.co.uk



The 12-32mm kit lens collapses to save space but can be quickly popped out to use.

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Nikon Lenses



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70-200mm F4G AF-S ED VR	£939.00
80-400mm F4.5-5.6G ED VR	£1899.00

Fuji Lenses



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£899.00

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18mm F2R XF	£379.00
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56mm F1.2 XF APD	£1089.00
60mm F2.4R Macro XF	£425.00
10-24mm F4 R XF	£749.00
18-135mm F3.5-5.6 WR	£599.00
50-140mm F2.8 WR OIS	£1249.00
50-230mm F4.5-6.7 OIS Black or Silver XC	£315.00
55-200mm F3.5-4.8 R LM OIS XF	£495.00

Zeiss Lenses



Otus 55mm F1.4
£3170.00

Distagon 15mm F2.8	£2352.00
Distagon 21mm F2.8	£1449.00
Distagon 28mm F2	£979.00
Planar 50mm F1.4	£559.00
Planar 85mm F1.4	£989.00
APO Sonnar 135mm F2	£1599.00
Makro-Planar 100mm F2	£1250.00
Otus 55mm F1.4	£3170.00

Canon Lenses

EF 50mm F1.4 USM	£257.00
EF 50mm F1.8 II	£85.00
EF-S 60mm F2.8 USM Macro	£348.00
EF 85mm F1.2L II USM	£1499.00
EF 100mm F2.8L IS USM Macro	£670.31
EF 8-15mm F4.0L USM Fisheye	£998.00
EF 16-35mm F2.8L USM II	£1169.00
EF 17-40mm F4.0L USM	£569.00
EF 24-70mm F4L IS	£829.00
EF 24-70mm F2.8L II USM	£1549.00
EF 24-105mm F4.0L IS USM	£727.00
EF 24-105mm F3.5-5.6 IS STM	£399.00
EF 70-200mm F2.8L IS USM II	£1622.00
EF 70-200mm F4.0L IS USM	£892.72
EF 70-300mm F4.0-5.6 IS USM	£379.00
EF 70-300mm F4.0-5.6L IS USM	£1059.00
EF 100-400mm F4.5-5.6L IS USM II	£1999.00

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PENTAX Q-S1 £369

THE 'Q' IN THE Q-S1 COULD easily stand for 'quirky'. While the camera doesn't have the largest sensor on test with just a 1/1.7in chip, it certainly packs a huge amount of character into its 105x58x34mm shell. The Q-S1 is available in 40 different colour combinations, and though its petite sensor won't suit everyone, the camera does have some unique features. Image stabilisation comes in the form of body-based Shake Reduction, so any attached lens benefits from sharper shots. JPEG and RAWs can be shot at a maximum of 4000x3000px and RAWs are shot in the universally-friendly DNG format, too.

The 5-15mm kit lens attaches via the Q mount and has a film-equivalent of 23-69mm when you've accounted for its 4.6x crop factor. It's the only camera here to offer a focusing ring on the lens barrel and on the optical front, its f/2.8-4.5 variable aperture zoom is two-thirds of a stop faster than the other lenses on test.

Inside, the Q engine processor gives an ISO range of 100-12,800, but only allows for a maximum frame rate of 5fps. While this is standard for an entry-level D-SLR, it's sluggish compared to all the other CSCs here.

On top you'll find a pop-up flash, power button, Mode dial with MASP modes and a Command dial for easy exposure adjustments. It's also the only camera here to feature a hotshoe to attach flash or

microphone peripherals. Oddly, the Playback button sits on top too. This took some getting used to as the usual, and more logical position is near the screen. The 3in LCD on the back has the smallest resolution on test at 460k-dot and is the only display here without touchscreen capabilities.

There's a sort of coin-shaped grip on front to give your middle finger some purchase. On the other side of the lens is a similarly shaped wheel, but this can be turned through five notches to add instant imaging effects such as Antique or Vintage Color.

The Pentax relies on Contrast detection to find focus and its performance was pretty good with just a moment taken to lock on to a subject. Unfortunately the write times weren't as brisk; 1.2secs was taken to write a



single JPEG and 2.75secs for one RAW. This worsened in its burst mode, where it slowed down after capturing six JPEGs. These took 2.16secs to clear the buffer. The RAW burst rate dropped to a lethargic 1.5fps and eight RAWs could be taken before it slowed. These took 8.8secs to write to card.

The Q-S1 offers image stabilisation in the form of body-based Shake Reduction, so any attached lens will benefit from sharper shots

THE RATINGS

Pros: In-body Shake Reduction, DNG RAW files, fast variable aperture lens
Cons: Sluggish write times, low-res display without touchscreen functionality

Features and build	★★★★★
Performance	★★★★★
Image Quality	★★★★★
Value for money	★★★★★
Overall verdict	★★★★★

Quickspec

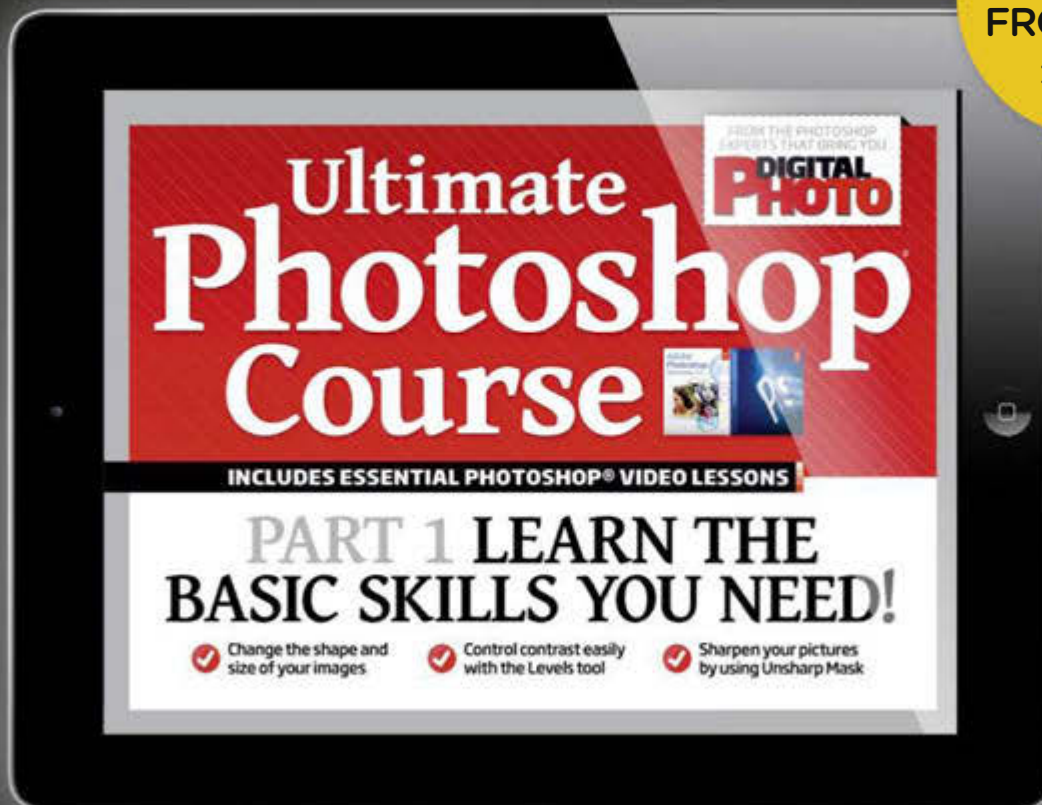
Street price: £369 (w/5-15mm f/2.8-4.5 ED AL lens)
Sensor size: 1/1.7in (4000x3000px)
Resolution: 12.4Mp
AF points: N/A
Burst rate: 5fps
ISO range: 100-12800
Shutter range: 30-1/8000sec & bulb
Monitor: 3in, 460k-dot LCD
Visit: www.ricoh-imaging.co.uk



The Pentax Q-S1 can be customised to suit your style, and comes in 40 different colour combinations.

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SAMSUNG NX MINI £269

IT WOULD BE EASY TO MISTAKE the NX Mini for a conventional compact rather than a CSC. It's the thinnest model on test with dimensions of 105x58x22.5mm. It's the easiest to fit in a pocket too, because it comes with a slender 9mm f/3.5 pancake lens. When attached the overall depth is just 3.5cm. The NX Mini is the lightest CSC here, and with lens, battery and microSD card accounted for, it weighs just 228g. With a street price of £269, it's the most affordable, too.

The kit lens offers a fixed focal length, and with no zoom to play with, you'll have to move closer to your subjects to fill the frame. The supplied 9mm f/3.5 prime has a film equivalent of 24mm when you factor in the 2.7x crop factor from the BSI CMOS sensor. It's worth noting that the NX-M mount is the newest type on test and at present, there are just three lenses available for it. In comparison, there are over 100 lenses available for CSCs with the Micro Four Thirds mount.

The NX Mini is the only camera on test not to feature any form of image stabilisation, so this is a compromise you'll have to make if you want a very pocketable CSC.

The sensor is the same physical size as the one found in Nikon's 1 J4 but it has a few extra megapixels at 20.5Mp. This means RAW and JPEG images are a little larger with maximum dimensions of 5472x3648px.

A DRIMe4 image processor gives the NX Mini an ISO range of 160-12,800 and a maximum burst rate of 6fps for RAW. This increases to 30fps when shooting JPEGs. The RAW frame rate is faster than the Q-S1, but much slower than the GM1's 40fps and the 1 J4's 60fps. Wi-Fi is at hand for remote shooting and sharing pics, and NFC is also featured so the camera can be paired with a smart device really quickly.

The top of the NX Mini is completely flush with power, Wi-Fi and shutter button, and an External Flash Port for bespoke accessories. There's no Mode dial, but a Mode button sits on the rear. There's no Command dial either, so exposure adjustments need to be made with the left and right D-Pad keys. The rear touchscreen display is quite low resolution at 460.8k-dot but it has a great party trick – it can be flipped up 180° for self-portraits or shooting from awkward angles.



The NX Mini uses contrast detect for AF, and this was nippy. One niggle though, was that after tapping to focus, the AF point would be reset when half pressing the shutter. This was frustrating when recomposing pics after focusing.

On the write times, the NX Mini cleared a Super Fine JPEG in 0.5sec, but a RAW took a slow 2secs. JPEGs could be rattled off in a healthy 30fps burst, and 30 frames could be taken here with 5secs to clear the buffer. RAWs were restricted to 6fps and just five pics could be taken. These took 7.8secs to write.

Samsung's NX Mini has a flip-up screen for self-portraits and NFC for easy wireless connectivity. It's the easiest to fit in a pocket and the most affordable CSC on test too

THE RATINGS

Pros: Slender build, low price, NFC
Cons: Limited lens range, image quality, no zoom, image stabilisation is absent, RAWs are restricted to a 6fps burst

Features and build	★★★★★
Performance	★★★★★
Image Quality	★★★★★
Value for money	★★★★★
Overall verdict	★★★★★

Quickspec

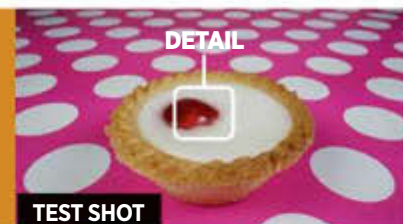
Street price: £269 (w/9mm f/3.5 lens)
Sensor size: 1in BSI CMOS (4896x3264px)
Resolution: 20.5Mp
AF points: N/A
Burst rate: 6fps
ISO range: 160-12800
Shutter range: 30-1/16000sec & bulb
Monitor: 3in, 460.8k dot tilting LCD
Visit: www.samsung.com/uk



The NX Mini really lives up to its name, taking on a shape inspired by compact cameras.

IMAGE QUALITY

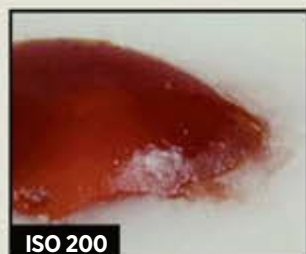
Our in-house lab tests reveals any imaging defects, so here's how the ISO performance and lens sharpness fared...



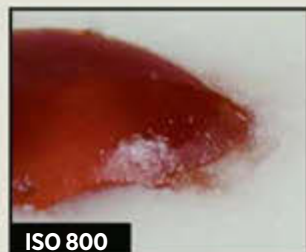
NIKON 1 J4

A small amount of barrel distortion was noted at the wide end of the zoom and a large amount of pincushioning when fully zoomed in. Corners were soft until f/8 at 10mm. The JPEGs fought off digital Noise up to ISO 400, with details softening completely at ISO 1600.

★★★★☆



ISO 200



ISO 800

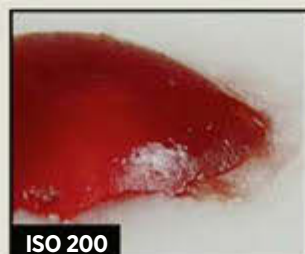


ISO 1600

PANASONIC GM1

Lens distortions were kept to a minimum with only a slight amount of barrel distortion at the wide 12mm end. Here corners were sharp even at f/3.5 and clean from chromatic aberration – this was continued at 32mm. We saw Noise at 400 ISO but images were usable up to 3200.

★★★★★



ISO 200



ISO 800

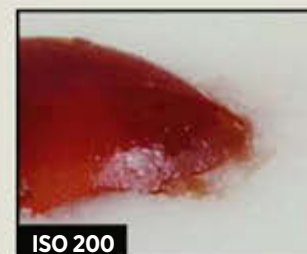


ISO 1600

PENTAX Q-S1

The wide end of the 5-15mm lens suffered from the most barrel distortion, with a sort of fisheye effect, but this disappeared at 15mm. JPEGs looked like they'd been over sharpened with haloes appearing around details. We saw digital Noise at ISO 200 with details softening at just ISO 400.

★★★★☆



ISO 200



ISO 800



ISO 1600

SAMSUNG NX MINI

We saw a very slight amount of pincushion distortion at 9mm but much more important was the corners which were soft from f/3.5 all the way up to f/11. Its images were Noise-free up to 1600 due to heavy in-camera processing which meant details were waxy from just ISO 400.

★★★★☆



ISO 200



ISO 800



ISO 1600

THE VERDICT

ALTHOUGH SMALL IN SIZE, the four CSCs we looked at this month were certainly mighty. Samsung's NX Mini is unlike any other CSC we'd seen before – it really is miniature! We were impressed by its large 20.5Mp resolution and slender dimensions that allow you to fit it in a jeans pocket. But it wasn't fault-free – stopping it from reaching the top was its slow 6fps RAW burst mode, a lack of image stabilisation and no zoom functionality. Prime lenses often give better image quality than zooms, but this wasn't the case with

the NX Mini as its 9mm lens suffered from noticeably soft corners.

The Q-S1 from Pentax caught our attention with its unique set of features. Its in-body Shake Reduction system is a great feature to have and its DNG RAW format is definitely not to be overlooked. It was unfortunate that the charming Q-S1 had such a small sensor and low resolution as this kept its image quality behind the others. The screen missed out on touch functionality too, and its write times were rather run-of-the-mill. This was enough to prevent it reaching the top slot.



The Pentax Q-S1 may have missed out on an award this time but its colourful build has plenty of character.

MINI CSC COMPARISON



	NIKON 1 J4	PANASONIC GM1	PENTAX Q-S1	SAMSUNG NX MINI
STREET PRICE	£359	£439	£369	£269
SENSOR SIZE	CX CMOS 13.2x8.8mm	MFT Live MOS 17.3x13mm	1/1.7in back-illuminated CMOS	BSI CMOS 13.2x8.8mm
RESOLUTION	18.4Mp	16Mp	12.4Mp	20.5Mp
LENS MOUNT	Nikon 1	Micro Four Thirds	Pentax Q	Samsung NX-M
AUTOFOCUS SYSTEM	Advanced Hybrid AF	Contrast	Contrast	Contrast
AF POINTS	105 Phase detect points	N/A	N/A	N/A
METERING	Matrix, Centre-weighted and Spot	Multiple, Centre-weighted, Spot	Segment, Centre-weighted, Spot	Multi, Centre-weighted, Spot
BURST RATE	20fps with AF, 60fps with MF	40fps	5fps	6fps
FLASH	Pop-up	Pop-up	Pop-up and hotshoe	Built-in
ISO RANGE	160-12800	200-25600 (extendable to 125)	100-12800	160-12800
SHUTTER RANGE	30-1/60,000sec & Bulb	60-1/16000sec	30-1/8000secs & Bulb	30-1/16000sec & Bulb
MONITOR	3in 1037k-dot LCD	3in 1,036k-dot	3in 460k-dot	3in 460.8k-dot
VIDEO	1080 @ 60fps	1080 @ 30fps	1080 @ 30fps	1080 @ 30fps
WRITE SPEED JPEG	1.1secs	0.2sec	1.2secs	0.5sec super Fine
WRITE SPEED RAW	1.7secs	0.2sec	2.75secs	2secs
JPEG CONTINUOUS	5.4secs to write 20	1sec to write 20	2.16secs to write 6	5secs to write 30
RAW CONTINUOUS	22.3secs to write 20	2.5secs to write 7	8.8secs to write 8	7.8secs to write 5
STORAGE	MicroSD, Micro SDHC, Micro SDXC	SD, SDHC, SDXC	SD, SDHC, SDXC	MicroSD, MicroSDHC, Micro SDXC
DIMENSIONS	99.5x60x28.5mm	98.5x54.9x30.4mm	58x105x34mm	110.4x61.9x22.5mm
WEIGHT (BODY ONLY)	191g	172g	201g	198g
WEIGHT (INC. LENS, BAT, CARD)	308g	277g	303g	228g
VISIT	www.nikon.co.uk	www.panasonic.com/uk	www.ricoh-imaging.co.uk	www.samsung.com/uk
FEATURES & BUILD	★★★★★	★★★★★	★★★★★	★★★★★
PERFORMANCE	★★★★★	★★★★★	★★★★★	★★★★★
IMAGE QUALITY	★★★★★	★★★★★	★★★★★	★★★★★
VALUE FOR MONEY	★★★★★	★★★★★	★★★★★	★★★★★
OVERALL VERDICT	★★★★★	★★★★★	★★★★★	★★★★★

RUNNER-UP

NIKON 1 J4

The 1 J4 came close to the top position and it did enough to receive our Silver Award. Speed is what the 1 J4 is all about, it's Advanced Hybrid AF system locks on in a heartbeat and its burst rate of 60fps for 20 RAWs is impressive. The write times weren't as fast though, and performance was also slowed by navigating menus to set the Mode and focus. If your budget doesn't stretch to our winner or fast frame rates are an absolute must – the 1 J4 is a great option.



WINNER

PANASONIC GM1

The GM1 stood out with some huge features in a very portable body. It really excelled in all areas, and our only issues were that its AF was a tad slower than the Nikon 1 J4 and its price is a little high. But if you're in the market for a truly compact CSC, the GM1 is currently the sweetest deal on the market.



NIKON D5500 / ENTRY-LEVEL D-SLR / £679 WITH 18-55MM LENS

A TOUCH ABOVE

Nikon's new entry-level D-SLR offers touchscreen control and a streamlined design

TEST BY BEN DAVIS

NIKON DIVIDES ITS entry-level range of D-SLRs into two tiers; the D3000 range and the slightly more advanced D5000 series. The D5500 is the latest update to the upper tier, and sees a few new tweaks and additions to its predecessor, the D5300. The range is updated fairly regularly though, with this being the third

release in the past 30 months. There's no internal overhaul – so it's evolution not revolution – and differences are therefore quite subtle. Most retailers have all three on sale simultaneously, indicating that the D5500 is an update rather than a replacement. There are a few additions though, so we got our hands on one to find out what's new...

Features & Build

The most significant new feature on the D5500 is the introduction of touchscreen technology. You can now adjust settings, focus, shoot and scroll through your images with just the swipe of your finger. The dimensions and resolution of the screen still matches the D5300 though. It's a 3.2in 1037k-dot TFT vari-angle LCD with 170° viewing angle and 100% frame coverage. This is the first Nikon D-SLR to boast a touchscreen, making its operation more akin to a smart device.

The screen isn't the only smart thing about the D5500 though – the inclusion of Wi-Fi means it's possible to control it remotely as

well as instantly share your images via a smartphone or tablet. GPS has been dropped on this model, but presumably few will notice as it's a feature used rarely. Most of us know where we were when the picture was taken, as there's usually a clue in the image!

The sensor is a 24.2Mp APS-C chip with no Optical Low Pass Filter (OLPF) – the same as the D5300. It measures 23.5x15.6mm and produces a resolution of 6000x4000px, which is comfortably big enough to make prints 50cm wide.

The EXPEED 4 image processor is another common feature, however the native ISO range is now 100-25,600. The top setting (without expansion) on the D5300 is 12,800, so this update offers enhanced sensitivity.

The pairing of sensor and engine allows images to be captured at a top speed of 5fps, which offers no advance on the pace of its siblings.

The AF system is nothing new, either. It's the dependable Nikon Multi-CAM 4800DX module with TTL phase detection, 39 focus points (including nine cross-types), and is used in several APS-C D-SLRs from the same stable.

The D5500 is capable of recording Full HD video clips at frame rates up to 50p/60p. There's Continuous Live View autofocus, to keep your subjects sharp. Video is enabled by turning on Live View with the lever switch, and then by simply hitting the Record button.

All these features are housed in a robust monocoque structure, made from a carbon-fibre composite material. It means the camera can be slimmer, which in turn makes the grip deeper. It's

TEST SHOT



100% DETAIL



Image quality Detail & lens

The D5500 comes with a 18-55mm f/3.5-5.6 lens. This offers a film-equivalent focal range of 27-82mm, making it a decent general purpose lens. However, it does have its drawbacks. At the wide end there's a noticeable amount of barrel distortion, and at larger apertures, detail towards the edges are a little soft. The sharpest results were found to be at f/11. At the long end of the zoom, we encountered minor amounts of pincushion distortion, but edge detail was sharp throughout. Impressive was the lack of any noticeable chromatic aberration (fringeing) or vignetting on our test shots.

This is the first Nikon D-SLR to boast a touchscreen and it handles just like a smartphone



Nikon's D5500 is a 24.2Mp APS-C D-SLR and comes equipped with a vari-angle touchscreen and Wi-Fi.

Key features of the Nikon D5500

WI-FI

The D5500 features built-in Wi-Fi, so you can pair the camera with a smart device to instantly upload your shots to the web.

TOUCHSCREEN

The 3.2in vari-angle touchscreen allows you to change camera settings, focus points and even take shots with the swipe or tap of a finger. You can also review images by swiping through in smartphone style.

HOTSHOE

The hotshoe sits above the pop-up flash, and allows users to connect accessories like external flashguns or GPS units.



QUICK ACCESS TO SETTINGS

You can easily get to 14 of the most frequently accessed shooting settings by pressing the *i* button, and then adjust them with either the D-Pad or touchscreen controls.

Quickspec

Street price: £639 (body) or £679 with 18-55mm f/3.5-5.6 kit lens

Resolution: 24.2Mp (6000x4000px)

Format: RAW, JPEG & MOV

Sensor: APS-C (23.5x15.6mm)

ISO: 100-25,600

Shutter: 30-1/4000sec & Bulb

AF system: Nikon Multi-CAM

4800DX with TTL phase detection

Focusing modes: Autofocus, Single, Continuous, Auto AF-S/AF-C and Manual focus

Metering: Matrix, Center-Weighted and Spot

Burst rate: 5fps

Monitor: 3.2in 1037k-dot TFT vari-angle LCD touchscreen

Viewfinder: Yes

Pop-up flash: Yes **Hotshoe:** Yes

Video: Full HD 1080p @60fps

Write speeds: 0.9sec RAW, 0.75sec Extra Fine JPEG

Storage: SD, SDHC and SDXC

Weight: 470g (body only)

Dimensions: (WxHxD)

124x97x70mm

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 Snow Leopards & cubs, Amur Leopards, Pumas, Lynx, Caracal, Serval & more. April 22nd, 23rd, 24th, £99

Professional Birds of Prey Shoot - Venue 1 Bambergh, Northumberland.

Amazing photo opportunities. Hill top views. Rocks, stone walls, single trees and gorse bushes abound. Golden Eagle, Peregrine Falcon, Snowy Owl and more in really natural situations. Perfect "in the wild" shots. Can combine with Bass/Farne. June 13th, 14th £139

Gannets diving off Bass Rock
 New workshop. Amazing diving shots. Sail around Bass Rock without landing on the island. 1 hour of throwing fish in the sea for Gannets to catch. June 19th £99

Professional Birds of Prey Shoot - Venue 2, Bambergh, Northumberland.

HIGHLY RECOMMENDED. New venue. Totally unconnected with previous location. New Falconer & Birds. Birds photographed in front of an amazingly beautiful waterfall. Unique. Up to ten different species of birds photographed. June 4th, 8th, 12th, 16th. £139

Big Cats Workshop, Kent
 Lions, Tigers, Leopards, Cheetahs, Pumas, Lynx, & Serval etc. Get amazingly close. Great photo opportunities. UK's most popular wildlife photo location. Max 12 photographers. March 21st, 28th, Apr 11th, £149

Big Cats Pro Workshop, Kent
 This is the same workshop as above, but with just SIX photographers. People of all abilities welcome. Lunch-time photo critique. More personal interaction with Cats. Also Jaguar. April 8th, 9th, 10th, £199

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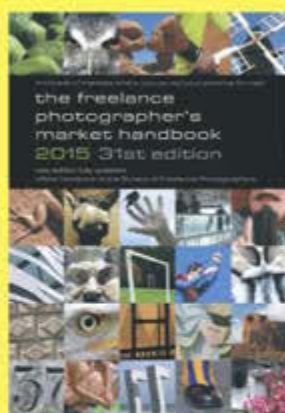
Bass Rock Gannets (60 miles north Farne Is.)
 Private boat. Exclusive use of island. 150,000 Gannets. Absolutely amazing Photos. 5 hours on rock. Get really close. Sole use of island for our workshop. Gannets diving for large box of fish near the island. June 5th, 7th, 11th, 18th, 21st £185

Birds of Prey, Bedfordshire
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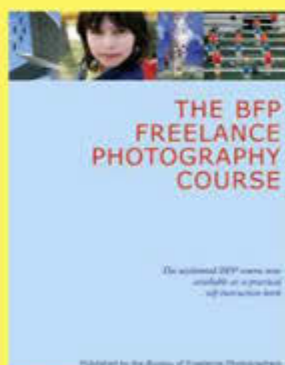
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lighter too, weighing just 470g.

On the top-plate you'll find a rotating metallic mode dial, housing the M, A, S, P, Auto, Effects and Scene modes. Adjacent to this is a metallic sub-command dial used to adjust settings. Above the viewfinder you'll find a pop-up flash, and a hotshoe if you want to add an external flashgun. There's a dozen other buttons scattered across the side and rear, but it doesn't feel at all cluttered.

Performance & Handling

The D5500 sits very firmly in the hand. The new deeper grip really makes a huge difference. It's comfortable yet secure, and the rubberised textured areas ensures it won't slip. The shutter button and sub-command dial both fall naturally under the forefinger and thumb, so ergonomics are sound.

Adjusting the settings is quick and intuitive. The *i* button has been moved from near the viewfinder to above the D-Pad, providing quicker access. From here you can change 14 different camera settings, such as image quality, focusing, metering and more. They can be set with the D-Pad, but it's quicker and easier to use the touchscreen instead. You can also adjust the exposure settings by tapping the screen, though this isn't any quicker than using the traditional dials.

If you prefer to use Live View, the vari-angle screen is great. It flips out of the body and twists round making it simple to compose from challenging angles. Shooting couldn't be easier. Simply tap the screen for where you want to set the focus, and once it's locked on, the camera takes the shot, just like a smartphone. Focusing is a bit slower when using Live View, but



The 3.2in 1037k-dot touchscreen flips out and rotates away from the body, to assist with composing from awkward angles.

TEST SHOT

Image quality ISO, JPEG & RAW image test results

The D5500 has an ISO range of 100-25,600, and at low ISOs we found our images were smooth and free from grain. On our JPEGs, we noticed evidence of Luminance Noise (grain) as well as Noise Reduction processing at ISO 1600, which produces a 'waxy' look to detail. This steadily increased as we moved through the sensitivity range, but even at the upper limits of the ISO there was still a pleasing amount of detail. Our RAWs suffered from more Noise, as they hadn't had any processing.

this is the case on all D-SLRs. It occurs because with the mirror up, the phase-detection sensors can't operate, so instead the slower contrast-detect AF is used.

Focusing through the viewfinder is fast and accurate. We had no problems locking on to all manner of subjects, and when light became scarce, the AF assist lamp helped get a good focus.

When shooting video, it was easy to set focus and exposure by tapping on the screen. However, when we reviewed the video the focusing mechanism could be heard on the soundtrack. The other frustration with video is that there's no headphone port, so you can't monitor the audio you're recording.

The EXPEED 4 image processor impressed. The buffer never filled when shooting continuous JPEGs but was capped to 100, and a solitary JPEG took just 0.75sec to save. A 12-bit RAW was cleared in 0.9sec while an impressive burst of 25 RAWs could be shot before it slowed and these took just 1.72secs to write to card. A more detailed 14-bit RAW option is available but this results in a burst rate a little slower than 5fps.

Shooting couldn't be easier. Simply tap the screen to set the focus, and once it's locked on the camera takes the frame

Value for Money

The D5500 comes bundled with an 18-55mm f/3.5-5.6 lens and costs £679, or it can be purchased for £639 body-only, putting it on a par with its competitors.

The Canon 750D, set to be released in April with a launch price of £689, offers a similar spec with a 24.7Mp APS-C sensor, a

touchscreen and a matching frame rate of 5fps.

If you're more interested in saving cash over having a touchscreen, then the slightly older D5300 can be picked up for £559 with the same lens.

But if you want the latest Nikon entry-level D-SLR, you won't be disappointed with the D5500.

THE VERDICT

If you're looking for an entry-level D-SLR, then the D5500 should definitely be on your shortlist. It's got all the features you'd expect from a camera in this category, as well as a few pleasant surprises. It handles well, making it a pleasure to use, and the image quality impressed during our tests. As far as updates go though, it's somewhat limited and so is unlikely to tempt many D5300 users into an upgrade.

Touchscreen technology is a welcome addition, but some may view it as a luxury rather than an essential when it comes to choosing a camera. The newly-sculpted grip gives more comfort and confidence, and the extra stop of ISO is useful in low light, but that's about the sum of the differences between the two cameras. If you don't mind spending an extra £120 for these new features, then the D5500 will serve you well.

Features & build	★★★★★
Performance	★★★★★
Image quality	★★★★★
Value for money	★★★★★
Overall score	★★★★★

LIGHT FIELD CAMERA / £1299

ONE-TAKE WONDER

Refocusing in software is a feat exclusive to Lytro cameras – we see if the latest model forecasts the future of photography

TEST BY DAN MOLD

IN TODAY'S WORLD we're accustomed to safety nets. Image stabilisation helps tame camera shake and RAWs allows you to correct exposure errors. Lytro's latest Illum offers a different fail-safe altogether, as the Light Field camera allows you to change focus after the shot's been taken.

The Illum is the successor to the original 2011 Lytro – a fascinating concept only restricted by its small, 1.2Mp images. The Illum sees an improved resolution, larger touchscreen and a more D-SLR-like build. But does it pave the way for future cameras?

Features & Build

Branded as a Light Field camera, the Illum doesn't just sound like

it's out of a sci-fi film – it looks futuristic too. It oozes style with a strikingly-angled rear display, minimalist blue trim, and a bold, fixed zoom lens. It sports a magnesium and aluminium body and weighs a touch over 1kg with the battery inserted.

The bespoke sensor is based on a 1/1.2in CMOS with an active area 3.8x larger than its predecessor at 10.82x7.52mm. It's billed with an impressive-sounding 40 Megarays but the final output for a still image is a much more pedestrian 4Mp; or roughly 10x7in at 240ppi.

The lens is physically huge, and its film-equivalent focal range of 30-250mm and constant f/2 aperture are equally impressive. There's no viewfinder, so

composing is left to the back-lit 384k-dot touchscreen on the rear. This is angled to make it easy to use when operating below eye-level, and can be pulled out and tilted up by 90° or down by 10°. Physical buttons are few and far between as most of the settings are accessed via the touchscreen. But, on the rear you'll find twin command dials, AF, AEL, Fn and Hyperfocal Distance buttons.

On top you'll find the power button, hotshoe, shutter and a Lytro button. Pressing the latter shows you the zones where you'll be able to refocus successfully in post-processing.

In the bundled Illum Desktop software you can change the depth-of-field with virtual

apertures for a shallow or large zone of sharp focus. You can also edit the RAW file in the Adjust tab with sliders including Exposure, Sharpening and Temperature. It's possible to upload a 'living picture' to the Lytro website from here, where viewers can interact with your image, changing the focus point. The Illum doesn't shoot movies but an Animate tab lets you create focus-pull videos from a single RAW. This is done using keyframes and presets such as Snap Focus.

The Illum captures more depth-of-field data than conventional cameras so its standard RAWs are quite large at around 55MB each. For the best image quality there's also

Image quality Lens detail and ISO

The Lytro feels like a bridge camera with its versatile zoom range equivalent to 30-250mm. When viewing at 100% details were slightly soft and remained this way, no matter where the focus point was placed in the software processing. Some purple and green fringeing was evident in the corners too, and a mottled pattern, alternating between sharp and blurred areas, was visible at 50%.

The lowest available ISO is 80, and here we noted some Noise in the results. This became more pronounced as ISO was increased. Pushing up the ISO also produced haloes on high-contrast edges on some of the images. The exported 4Mp images give a print size of 10x7in at 240ppi. While fine for screen use, it doesn't compare well to 20Mp cameras which produce 23x15in prints at the same resolution.





Lytro's Illum allows you to change the point of focus after the shot has been taken

XRAWs which take up around 110MB per shot. A Snapdragon 800 processor handles the large files but only allows for a maximum burst rate of 3fps. The ISO range stretches from 80-3200 and the shutter speed covers 32secs-1/4000sec.

Performance & Handling

Despite its large lens, the Illum doesn't feel front-heavy. The big, grippy silicone zoom and focus rings give it a reassuringly secure feel in the hand.

The 4in display is larger than most and its touch interface is one of the slickest we've come across. It's equipped with good compositional overlays and focusing tools that are useful. The only niggle was that the touch focus resets itself to the central AF point when pressing the shutter, making it tricky to set. At 384k-dots the LCD is low in resolution, but it's fine for composing and reviewing images.

The maximum 3fps burst rate is slow for a camera at this price. Arguably, the images that would benefit the most from its unique focusing are those taken at high frame rates with a moving subject rushing past. Macro is another area the Illum could excel at, but it's limited to a reproduction ratio of 1:3 or one third life-size.

The Lytro took 3.1secs to clear a single RAW and 5secs to write an XRAW to card. Ten standard RAWs could be fired at 3fps before slowing and these took 21secs to write. Six XRAWs filled the buffer and then took 22.4secs to save to card. It also took a lengthy 14secs to turn on from a cold start.

On the software side, exporting from Lytro Desktop was quite slow, taking 20secs to produce a 4Mp JPEG. For animations you'll want to put the kettle on, as it took 11mins to render 7secs of HD video.

Value for money

It's tough to score value on a truly unique product like the Illum, as there's nothing to compare it with. If you're after the best image quality, a D-SLR like Nikon's D7100 at £899 with 18-105mm lens or Canon's 70D at £997 with an 18-135mm will do better. Panasonic's FZ1000 bridge camera has a similar zoom range and a larger 1in sensor. It's half the price too at £650, but nothing offers the post-focusing and virtual aperture choices, as that's what the Illum is all about.

Quickspec

Street price: £1299
Sensor size: 1/1.2in Light field CMOS
Resolution: 4Mp (2450x1634px)
Focusing modes: Region AF
Metering: Scene Evaluative
Burst rate: 3fps
Flash: No **Hotshoe:** Yes
ISO range: 80-3200
Shutter range: 32-1/4000sec
Viewfinder: None
Monitor: 4in, 384k dot back-lit LCD
Write speed: 3.1secs (RAW), 5secs (XRAW)
Storage: SDHC/SDXC
Dimensions: 86x145x166mm
Weight: 956g (body only)
Visit: www.lytro.com

THE VERDICT

At 4Mp, the Illum has four times the resolution of its predecessor, and if the next model is four times greater than this, then we can see Light Field technology really taking off. But for now, you're paying £1299 for a camera that's beaten for picture output resolution by most cameras on the market. The technology is unique, fascinating and brilliant, but the final file can't compete with the 20 or 24Mp image quality offered by similarly-priced cameras.

Features & build ★★★★★
Performance ★★★★★
Image quality ★★★★★
Value for money ★★★★★
Overall score ★★★★★

GADGETS & GIZMOS

We review and rate the latest photography and imaging accessories to hit the shelves

TESTS BY DAN MOLD & ANDY HEATHER

ACTION CAMERA / £90

POLAROID CUBE

Features: Battery life 90mins, 128° angle of view Visit: www.polaroid.com

THE POLAROID CUBE IS A FUN camera that's surprisingly small. Measuring 3.5cm across it's about the size of an ice cube and weighs 10g less than a Mars bar at 48g. The quirky Cube comes in Blue, Red and Black and is capable of Full HD video. It looks quite unlike most other cameras on the market. There's no screen and it's not Wi-Fi enabled, so you'll have to wait until you get back to your computer to see your shots. Its housing is made of tough rubber and it's splash-resistant, thanks to a twist-on cap that protects the microSD memory card slot and

The Polaroid Cube is a fun, quirky action camera perfect for adventurers

the micro USB port which enables charging. In testing the Cube lived up to its claims of a 90-minute battery life.

It's marketed as a 'lifestyle accessory' rather than a full-on action cam. Despite that, the Cube feels durable enough to throw around or take with you on an adventurous day out. It doesn't have the ergonomics of a normal camera, meaning it doesn't feel like it's designed to be handheld. Instead, it's fitted with a powerful magnet on its base so can be attached to a plethora of metallic objects you may come across on your travels. It also allows multiple Cubes to be stacked together for different shooting angles and this adds a sense of fun when filming.

A variety of mounts and adapters can be purchased for the Cube, including a waterproof case, bicycle mount and suction

cup attachment. These help you fix your Polaroid Cube to a wide range of surfaces or to wear it as you swim, pedal or canoe through your adventures! To turn the Cube into a fully-fledged, waterproof action cam you'll need the underwater case which costs £25. This does a good job of keeping the water out and comes with a wrist strap.

The lens has a wide angle-of-view of 124°. This allows selfies to be taken at arm's length and also helps to smooth motion when you're filming. One quirk was that the wide-angle rendered our subjects quite small in the frame, and its fixed focus is set some distance away. This means if you move closer to your subject to fill the frame, your point of sharpest focus can end up somewhere behind the subject. However, this is less obvious when recording video, and this is what the Cube is best suited for.

There's a solitary button on top, and pressing this once takes a 6Mp still image in JPEG format (RAW is not supported). Pressing it twice starts video recording.

Whether you shoot stills or video the aperture is fixed at a constant f/2.4, and a small red LED blinks when shooting Full HD at 1920x1080. Audio is recorded using the built-in microphone. This is good enough give you a general sense of the scene, but in most circumstances you'll probably want to add music or voice-over to your videos when you edit them as audio quality is little tinny.

The Cube is a tiny camera designed to record activities that normally preclude the use of a camera. It can go to places that few other cameras can, so comes recommend to anyone looking to document their adventures.



The Cube has a magnetic base so multiple units can be stacked together or attached to metal surfaces.

THE VERDICT

Polaroid's Cube is all about fun and it's certainly not a chore to use. It's not for everyone though: with no display or Wi-Fi you'll have to wait until you're back at a computer to view your footage and pictures.

RATING ★★★★★

PORTABLE STOOL / £69.95

WALKSTOOL COMFORT 55 XL

Features: Collapsible stool, 55cm max height, 225kg maximum load
Visit: www.walkstool.com

OUTDOOR PHOTOGRAPHY CAN BE a labour of love, often requiring an early start, cold conditions and crouching down for an extended amount of time. Walkstool's Comfort 55 XL is a portable seat designed to help with the latter. When fully extended the telescopic legs raise the seat 55cm off the ground. It collapses down to 41cm and slips into a supplied sling bag. Its push-button locks are quite small though, so it can be fiddly to operate with gloved hands.

The 55 XL weighs 900g and supports a remarkable 225kg of weight. The seat is made from a hard-wearing material that's comfortable to sit on for long periods and it saves you from arching over when using a tripod or monopod.

The feet are quite small so tended to sink into boggy ground. But a Walkstool Steady



accessory can be purchased for an additional £20 to stop this from happening.

The Walkstool adds a surprising degree of comfort to more static outdoor shoots like low-light, landscapes and wildlife. At £69.95 it's not cheap, but the comfort it offers makes the price easier to swallow.

THE VERDICT

The Comfort 55 XL eases the burden of kneeling or crouching over extended shooting periods and is perfectly suited to outdoor & wildlife photography.

RATING ★★★★★

UNIVERSAL CHARGER / £30

HÄHNEL UNIPAL EXTRA

Features: Automatic polarisation, supports Li-Ion and Ni-Mh batteries **Visit:** www.hahnel.ie

HÄHNEL'S UNIPAL EXTRA is a universal charger with a difference; in addition to charging practically all Li-Ion and AA/AAA Ni-Mh batteries it has a built-in power bank allowing it to hold a charge. Two large thumb wheels precisely position its contacts so it fits a huge range of batteries, it then cleverly detects the polarisation so there's no need to worry about which way round you insert the battery.

There's a USB port for charging devices like smartphones and tablets and it features a 100-240v output, so it can be used worldwide. If you like the idea of charging from car you'll need to purchase a 12v cigarette lighter plug.

The unit's unique selling point is its internal power bank which allows you to charge when away from a plug socket.

Hähnel's HL-EL14 is third-party battery for Nikon D-SLRs such as the D3300, and with the power bank at full capacity it can charge this battery to an impressive 80%.

The Unipal Extra is supplied with a USB to micro-USB cable which you can use to charge up the device from a computer or USB-plug.

THE VERDICT

If you're constantly on the move the Unipal Extra is a fantastic gadget to own, capable of charging D-SLR Li-Ions, flashgun AA's and smart devices.

RATING ★★★★★



TRIED & TRUSTED

Used. Abused. Rated.



HOYA HMC UV FILTER FROM £11.99

Dan says: A UV filter is a cost-effective way of protecting your lens. I currently use Hoya's HMC UV(C) filters on my wide-angle, standard zoom and telephoto lenses and haven't noticed a drop in clarity. UV filters also cut down on haze for a sharper shot. The HMC UV's start at around £12 and that's much more affordable than replacing the front element of your lens should it get scratched! www.hoyafilter.com



MANFROTTO NEOTEC 458B TRIPOD £289

Jon says: A tripod is an essential item for creative shots, but many can slow you down. That's not the case with the Neotec, as its unique legs automatically lock in place as you pull them down. It takes just 6secs to extend to its full height of 156cm, and it collapses in under 2secs! It's not light at 2.4kg, but is rock solid and a delight to use. manfrotto.co.uk



CANON TC-80N3 £119

Matty says: At £119, Canon's TC-80N3 sits at the top end of cable releases, but mine has seen seven years of heavy use and is still going strong! It has an 80cm cord, illuminating LCD and exposures can be set from 1sec to a vast 99 hours. It's the first accessory I pack when shooting landscapes. www.canon.co.uk



**500
ITEMS
IN STOCK**

ACCESSORIES

Ball Head Heaven – set the preferred friction and lock in place. Once the desired friction is set the camera can be moved by a little extra pressure in any direction and from horizontal to vertical. The friction resistance remains constant, reliable and smooth and will not let the camera move on its own. It is oh, so easy.



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BATTERIES

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STEPPING RINGS

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FILTERS

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DARKROOM

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VIDEO

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**50
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**46
ITEMS
IN STOCK**

STUDIO

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SCRAPBOOK

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Canon Compatibles

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CLi8 B&C/MY/CMY 15ml	£3.99
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No.338 Black 11ml	£18.99
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No.110 Colour 12ml	£10.99
No.300XL Black 15ml	£14.99
No.300XL Colour 18ml	£16.99
No.301XL Black 15ml	£14.99
No.301XL Colour 18ml	£16.99
No.336 Black 10ml	£7.99
No.337 Black 21ml	£10.99
No.338 Black 21ml	£10.99
No.339 Black 34ml	£12.99
No.342 Colour 12ml	£10.99
No.343 Colour 21ml	£12.99
No.344 Colour 21ml	£14.99
No.348 Photo 21ml	£12.99
No.350XL Black 30ml	£14.99
No.351XL Colour 20ml	£16.99
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brother

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No.33 Colour	£24.99
No.36 Black	£19.99
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LR44 Energizer Alkaline (2)	£1.99
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46mm £4.99	46mm £10.99	37mm £12.99
49mm £4.99	49mm £10.99	46mm £12.99
52mm £4.99	52mm £10.99	52mm £11.99
55mm £5.99	55mm £11.99	58mm £14.99
58mm £6.99	58mm £12.99	62mm £16.99
62mm £7.99	62mm £14.99	67mm £18.99
67mm £8.99	67mm £15.99	72mm £21.99
72mm £9.99	72mm £17.99	77mm £25.99
77mm £11.99	77mm £19.99	82mm £29.99
82mm £14.99	82mm £22.99	
86mm £19.99		

KODAK Slim Frame Circular Polarising Filters	Marumi DHG Slim Frame Multicoated Circular Polarising Filters	Hoya Pro-1 Digital Slim Frame Multicoated Circular Polarising Filters
46mm £12.99	52mm £13.99	52mm £27.99
52mm £12.99	58mm £15.99	58mm £32.99
55mm £14.99	62mm £17.99	62mm £35.99
58mm £15.99	67mm £19.99	67mm £39.99
58mm £17.99	72mm £21.99	72mm £43.99
62mm £19.99	77mm £24.99	77mm SPECIAL £39.99
67mm £22.99		82mm £56.99
72mm £26.99		
77mm £29.99		
82mm £34.99		
86mm £39.99		

KODAK Close Up Filter Sets (+1, +2 & +4)	Marumi DHG Slim Frame Multicoated Circular Polarising Filters	Hoya Pro-1 Digital Slim Frame Multicoated Circular Polarising Filters
52mm £26.99	52mm £31.99	52mm £52.99
58mm £34.99	58mm £35.99	58mm £60.99
	62mm £39.99	62mm £67.99
	67mm £44.99	67mm £75.99
	72mm £49.99	72mm SPECIAL £79.99
	77mm £54.99	77mm £89.99
	82mm £69.99	82mm £120.99

SQUARE FILTERS

KODAK P-Type Filter System

The P-Type square/rectangular filter system consists of three parts:

- 1) An adapter ring that screws onto the front of your lens
- 2) A filter holder clips onto the ring
- 3) One or more P-Type (84mm wide) filters

KODAK square filters are manufactured in the UK, and are fully compatible with the Cokin P-Type filter system

49mm Adapter Ring	£4.99	Circular Polarizing	£29.99
52mm Adapter Ring	£4.99	ND2	£9.99
55mm Adapter Ring	£4.99	ND4	£9.99
58mm Adapter Ring	£4.99	ND8 NEW	£10.99
62mm Adapter Ring	£4.99	ND2 Soft Graduated	£11.99
67mm Adapter Ring	£4.99	ND2 Hard Graduated	£11.99
72mm Adapter Ring	£4.99	ND4 Soft Graduated	£11.99
77mm Adapter Ring	£4.99	ND4 Hard Graduated	£11.99
82mm Adapter Ring	£4.99	ND8 Soft Graduated NEW	£13.99
Standard Holder	£5.99	ND8 Hard Graduated NEW	£13.99
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Filter Wallet (hold 8 filters)	£9.99	Dark Blue Graduated	£11.99

Six-Piece ND Filter Kit £43.99

Here's a kit which includes all the popular ND filters, and everything you need to get started! The kit contains: 1x ND2 Filter, 1x ND2 Soft Graduated Filter, 1x ND4 Filter, 1x ND4 Soft Graduated Filter, 1x P-Type Filter Holder, 1x P-Type Adapter Ring of your choice (49-82mm).

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ET-60 Canon 75-300/4-5.6	58mm Shaped Petal Hood
ET-65B Canon 70-300/4-5.6	62mm Shaped Petal Hood
ET-67 Canon 100/2.8 Macro	67mm Shaped Petal Hood
ET-67B Canon 60/2.8	72mm Shaped Petal Hood
EW-60C Canon 18-55 IS	46mm Rubber Hood
EW-73B Canon 17-45 IS	52mm Rubber Hood
EW-78BII Canon 28-135 IS	58mm Rubber Hood
EW-78D Canon 18-200 IS	62mm Rubber Hood
EW-78E Canon 18-55 IS	67mm Rubber Hood
EW-83E Canon 17-40/4.0	72mm Rubber Hood
EW-83J Canon 17-55/2.8	77mm Rubber Hood
HB-45 Nikon 18-55 VR	
SH-006 Sony 18-70/3.5-5.8	

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Step-Up and Step-Down Rings

Stepping rings are used to "step-up" or "step-down" from one filter thread size to another.

34-37mm	52-55mm	58-55mm	67-62mm
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46-48mm	55-58mm	62-67mm	72-77mm
49-52mm	58-52mm	62-72mm	77-72mm

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 Weight: 0.50kg
 Load: 5.0kg
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 A section aluminium alloy tripod, removable centre column, built in spirit level. Supplied with hähnel alloy ball head, and carry case.

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 Folded: 60cm
 Max Height: 153cm

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 A section aluminium alloy tripod including 3-way ball head, removable pan/tilt head and carry case.

Weight: 1.90kg
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 Folded: 61cm
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 Superior general purpose ball head with control handle. Side mounting for lens.

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 Load: 23.0kg
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In the UK more than **35,000** men are diagnosed with prostate cancer every year. We need your help to find a cure for this terrible disease by taking part in the next Snowdon500 challenge over the weekend of 13th & 14th June 2015.

Over 500 people will trek to the summit of the highest mountain in England & Wales over the weekend and we would love you to be one of them. Registration is just £35.00 and we ask you to raise £250 each.



To register or find out more go to www.snowdon500.co.uk or call Paul on 07446 534436 for an information pack.



snowdon500

If you would like more information about prostate cancer visit the Prostate Cancer Research Centre's website:

www.prostate-cancer-research.org.uk

For a free copy of our booklet Treating Prostate Cancer – Questions & Answers call: 020 7848 7546 or email: info@prostate-cancer-research.org.uk

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Nissin
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DIGITAL DOCTOR



Got a photo in need of some help? Let our expert transform it into something new. Send pics to dpimages@bauermedia.co.uk

Our Photoshop medic gives creative first aid to an aviation image...

MERVYN BLACK'S photo of a World War II Lancaster bomber was captured using his Canon 5D MkIII and 100-400mm lens during an air show in County Down. "I used a shutter speed of 1/1000sec, but this had the result of freezing the propellers. I'd like to see some more motion in the props, so what can you do to my image?"

Digital Doctor says: Air shows are amazing events to visit. There's the roar of the jet engines, the majestic whirl of older propeller-power craft and all that history to marvel at. But they're also tricky to photograph, as subjects move quickly and camera positions are often restricted to spectator areas. Mervyn did well to capture the iconic Lancaster – a historic craft aviation fans go weak at the knees for – heading straight towards his lens. This is testament to his ability to spot the flightpath of the planes and take up an appropriate position. But the tight crop limits the image's creative possibilities.

To bring this image to life, my first task was to find a stock image of a runway that I could add Mervyn's plane to. The runway image kept the same head-on approach, so I could easily position the plane as if it was doing a flypast. To get rid of the old sky from the original image but keep the plane



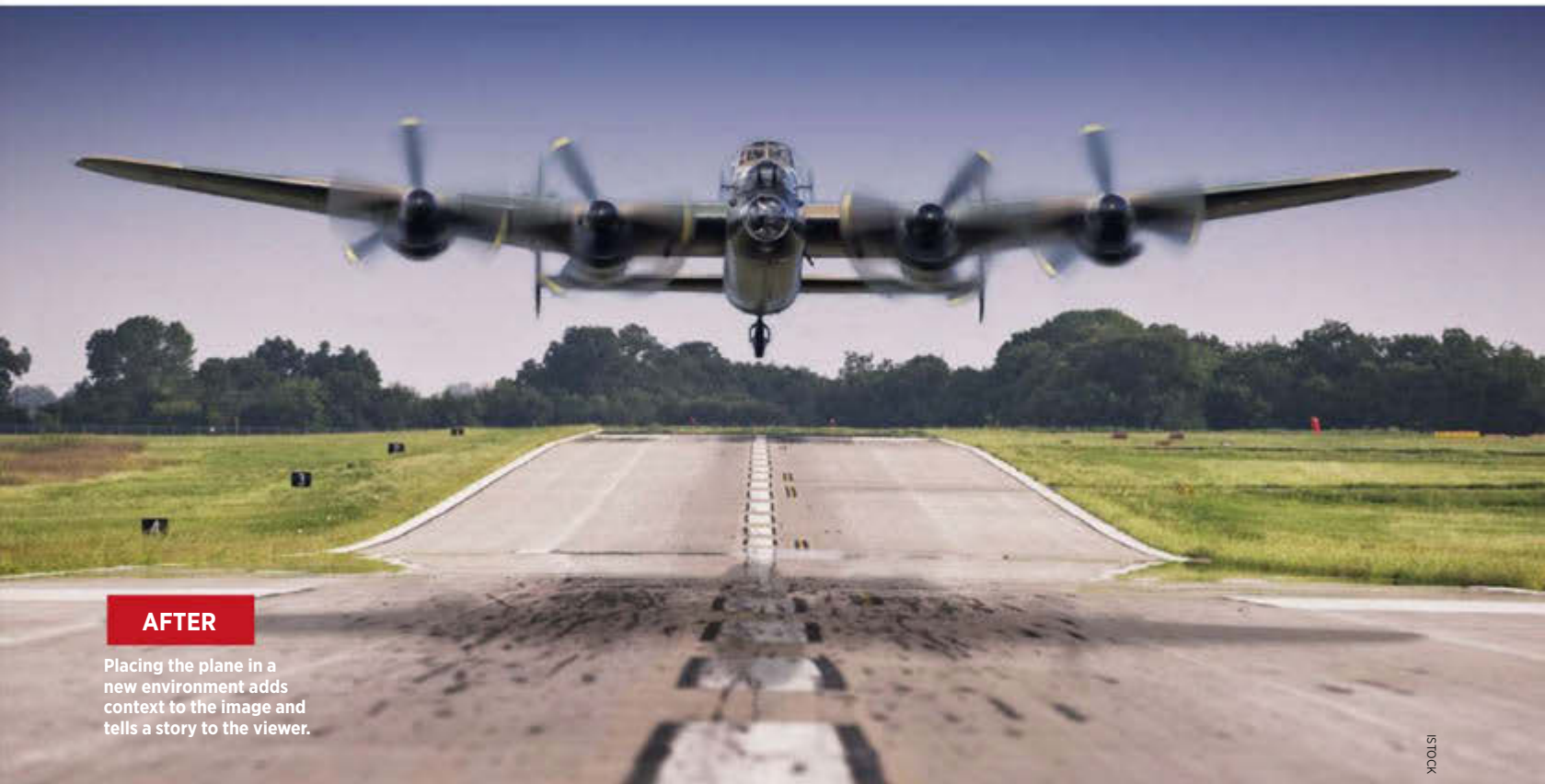
as a cut out, I added a Layer Mask and carefully painted out the unwanted pixels using a brush set to black.

Next, I turned my attention to Mervyn's propellers, which have been frozen by the fast shutter speed. The solution was to add the blur myself, so to make sure only the prop area would be affected, I used the Elliptical Marquee tool to draw around the four propeller areas and then applied the Radial Blur filter. This affected the whole circular selection, rather than just the prop blades, but this is actually the same effect you'd see with the eye due to the speed of the blades spinning around.

With all the elements in place, the image looked like it had been taken on a modern camera, which didn't create any emotional connection with the Lancaster. The solution was to add a bleach bypass effect by duplicating the image, removing all colour (Ctrl+Shift+U) and then changing the Blending Mode to Overlay. The result was an image bursting with character – like it had been snapped on a Box Brownie by the Wing Commander at the end of the runway, awaiting the safe return of his Squadron!

DIGITAL DOCTOR

■ Email a problem pic to our Digital Doctor at dpimages@bauermedia.co.uk. Tell us about the shot, where it was taken and what you were looking to achieve. Include a mugshot, and the best will be published and receive some digital surgery.



AFTER

Placing the plane in a new environment adds context to the image and tells a story to the viewer.

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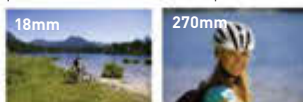
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